



सत्यमेव जयते

File No.: IA-J-11015/3/2023-IA-II(NCM)
Government of India
Ministry of Environment, Forest and Climate Change
IA Division



Dated 23/01/2024



To,

M/s VEDANTA LIMITED
Sesa Ghor, 20 EDC Complex, Patto, Panjim, NORTH GOA, GOA, 403001
MK.Reddy@vedanta.co.in

Subject: Bicholim Mineral Block- Block 1 (Auction Block) of M/s Vedanta Limited for mining of Iron Ore with proposed production capacity of 3.0 MTPA, Waste: 25.162 MTPA(Total Excavation: 28.162 MTPA) along with crushing and screening plant capacity of 4.0 MTPA in the mine lease area of 478.5206 ha, located at Bicholim, Bordem, Lamgao, Mulgoa, Mayem&Sirigao Villages of Bicholim Taluka of North Goa District, Goa - Environmental Clearance (EC) - reg.

Sir/Madam,

This has reference to the online proposal no. IA/GA/MIN/442593/2023 dated 1.09.2023 for grant of Environmental Clearance (EC) to the project for Bicholim Mineral Block- Block 1 (Auction Block) of M/s Vedanta Limited for mining of Iron Ore with proposed production capacity of 3.0 MTPA, Waste: 25.162 MTPA(Total Excavation: 28.162 MTPA) along with crushing and screening plant capacity of 4.0 MTPA in the mine lease area of 478.5206 ha, located at Bicholim, Bordem, Lamgao, Mulgoa, Mayem&Sirigao Villages of Bicholim Taluka of North Goa District, Goa.

2. The particulars of the proposal are as below :

(i) EC Identification No.	EC23A0000GA5507405N
(ii) File No.	IA-J-11015/3/2023-IA-II(NCM)
(iii) Clearance Type	Fresh EC
(iv) Category	A
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vi) Sector	Non-Coal Mining
(vii) Name of Project	Block 1- Bicholim Mineral Block for Iron Ore
(ix) Location of Project (District, State)	NORTH GOA, GOA
(x) Issuing Authority	MoEF&CC
(xii) Applicability of General Conditions	No

3. In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A, B and C)/

EIA & EMP Reports were submitted to the MoEF&CC for an appraisal by the EAC under the provision of EIA notification 2006 and its subsequent amendments.

4. The above-mentioned proposal has been considered by EAC in the meeting held on 22.09.2023 and 26.12.2023. The minutes of the meeting and all the project documents are available on PARIVESH portal which can be accessed from the PARIVESH portal by scanning the QR Code above.

5. The EAC, After detailed deliberations made by the Project Proponent and the EIA Consultant, the EAC in its meeting held during 26th December, 2023 under the provisions of EIA Notification 2006 and its subsequent amendments, **recommended** the proposal for grant of Environmental Clearance (EC) to Bicholim Mineral Block- Block 1 (Auction Block) of M/s Vedanta Limited for mining of Iron Ore with proposed production capacity of 3.0 MTPA, Waste: 25.162 MTPA (Total Excavation: 28.162 MTPA) along with crushing and screening plant capacity of 4.0 MTPA in the mine lease area of 478.5206 ha, located at Bicholim, Bordem, Lamgao, Mulgoa, Mayem & Sirigao Villages of Bicholim Taluka of North Goa District, Goa subject to the following certain specific conditions in addition to the standard EC conditions applicable for non-coal mining projects (Annexure 1).

6. The matter was examined in the EAC in accordance with the Environmental Impact Assessment Notification, 2006 and further amendments thereto and the undersigned is directed to say that the Ministry of Environment Forest & Climate Change after accepting the recommendation of EAC in its meeting held during 26th December, 2023 hereby accords the Environmental Clearance (EC) to M/s Vedanta Limited for Bicholim Mineral Block- Block 1 (Auction Block) for mining of Iron Ore with proposed production capacity of 3.0 MTPA, Waste: 25.162 MTPA (Total Excavation: 28.162 MTPA) along with crushing and screening plant capacity of 4.0 MTPA in the mine lease area of 478.5206 ha, located at Bicholim, Bordem, Lamgao, Mulgoa, Mayem & Sirigao Villages of Bicholim Taluka of North Goa District, Goa, subject to compliance of the terms & conditions and the environmental safeguards mentioned at Annexure 1.

7. The Ministry reserves the right to stipulate additional conditions, if found necessary.

8. 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.

9. The PP is under obligation to implement commitments made in the Environment Management Plan, which forms part of this EC.

10. 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.

11. 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.

12. 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.

13. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the project proponent (during construction 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 Ministry/Regional Office along with the Six-Monthly Compliance Report.

14. 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.

15. The Regional Office of this MoEF&CC shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

16. 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.

17. This issue with an approval of the Competent Authority.

Copy To

1. **The Secretary**, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. **The Secretary**, Department of Mines and Geology, Ground Floor of Institute Menezes Braganza, Government of Goa.
3. **The Director**, Department of Environment and Climate Change (DoE and CC), Government of Goa.
4. **The Secretary**, Department of Forests, Government of Goa, Goa Van Bhavan, Goa.
5. **The Chief Wildlife Warden**, Goa Van Bhavan, Forest Department, Altinho, Panaji Goa. 403001.
6. **The Deputy Director General of Forests (C)**, Ministry of Env., Forest and Climate Change, Integrated Regional Office, Kendriya Sadan, 4th Floor, E&F Wings, 17th Main Road, Koramangala II Block, Bangalore - 560034.
7. **The Member Secretary**, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
8. **The Member Secretary**, Central Ground Water Authority, 18/11, Jam Nagar House, Man Singh Road, New Delhi-110011.
9. **The Member Secretary**, Goa State Pollution Control Board, Nr. Pilerne Industrial Estate, Opp. Saligao Seminary, Saligao, Goa 403511.
10. **The Controller General**, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur- 440 001.
11. **The District Collector**, North Goa District, Government of Goa.
12. **Guard File.**
13. **PARIVESH Portal.**

Annexure 1

Specific EC Conditions for (Mining Of Minerals)

1. Court Case

S. No	EC Conditions
1.1	The instant 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.

2. Environment Monitoring & Reporting

S. No	EC Conditions
2.1	The Project Proponent shall monitor the air quality, noise level, water quality, water level and ground vibration during drilling and blasting at the edge of the mine, near the village, crusher and at other sensitive receptors and such collected data shall be submitted quarterly to the Ministry's Regional Office.

3. Public Hearing Concerns

S. No	EC Conditions
3.1	The budget of Rs 309.3 Lakhs to address the concerns raised by the public in the public consultation to be completed within 3 years from the date of start of mining operations. PP shall comply 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.

4. Awareness On Single Use Plastic (Sup)

S. No	EC Conditions
4.1	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.

5. Implementation Of Emp

S. No	EC Conditions
5.1	The Project Proponent should adopt the proper mitigation measures as proposed under EMP with budgetary provision of Rs 72 Cr. 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 the Ministry's Regional Office.
5.2	The Project Proponent should establish in house (at project site) environment laboratory for measurement of environment parameter with respect to air quality and water (surface and ground). A dedicated team to oversee environment management shall be setup at site which should comprise of Environment Engineers, Laboratory chemist and staff for monitoring of air, water quality parameters on routine basis instead of engaging environment monitoring laboratories/consultants. Any non-compliance or infringement should be reported to the concerned authority.

6. Cleaner Production

S. No	EC Conditions
6.1	The Project Proponent shall explore the possibility of using atleast 20% of Electric vehicles/CNG/Solar instead of diesel operation within three years.

7. Permission For Groundwater Withdrawal

S. No	EC Conditions
7.1	NoC from the Central Ground Water Authority (CGWA)/ Concerned Local authority, as the case may be, 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.

8. Training Program

S. No	EC Conditions
8.1	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 EAC.

9. Occupational Health Checkup

S. No	EC Conditions
9.1	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.

10. Regrassing

S. No	EC Conditions
10.1	The mining lease holders shall, after ceasing mining operations, undertake regrassing 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. The implementation report of the above said condition shall be submitted to the Ministry's Regional Office.

11. Capping

S. No	EC Conditions
11.1	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.

12. Common Boundary

S. No	EC Conditions
12.1	The Project Proponent needs to obtain prior permission from the MoEF&CC for mining in common boundary as and when required.

13. Conveyor Belt

S. No	EC Conditions
13.1	As committed before the EAC, the Project Proponent needs to explore the feasibility for installing conveyor belt system for transportation.

14. Ecology Restoration

S. No	EC Conditions
14.1	The mined out pits will be converted into water reservoirs, pond with other ecotourism facilities like water sports, boating, fishing etc., 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.
14.2	The ecology restoration or mine reclamation activities shall be carried out concurrently with mining operations. The Project Proponent shall ensure that the restoration models demonstrated before the EAC shall be developed in association with research institutes like NEERI, Goa University etc.

15. Surface Water Monitoring

S. No	EC Conditions
15.1	Regular monitoring and analysis of discharge water and at upstream and downstream of Bicholim and Asnora river needs to be carried out quarterly through NABL/MoEF&CC accredited laboratory.

16. Green Belt And Plantation

S. No	EC Conditions
16.1	Extensive native fruit bearing plantation shall be carried out in all safety zones with density of 2500 trees/ha.
16.2	The Project Proponent needs to complete the entire peripheral plantation under green belt, safety

S. No	EC Conditions
	barrier plantation and gap plantation within three 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 (seedlings) the seedlings should have proper trained root stock with root biomass commensurate with seedling height to ensure good growth after out planting. Plantation shall be undertaken in consultation with the State Forest Department. The Project Proponent shall make the actual count on the saplings planted and its survival rate and in case of failure of achievement of 95% survival rate, action plan for achieving the target survival rate shall be submitted to the Ministry's Regional Office.

17. Soil Erosion

S. No	EC Conditions
17.1	The waste dump slopes shall be covered with laterite material and then with biodegradable geotextile mats to prevent the soil erosion of the dump slopes so as to facilitate the growth of native species.

18. Air Pollution

S. No	EC Conditions
18.1	The Project Proponent needs to install the permanent water sprinklers along 3.40 km haul road within the ML area and 2.80 km length outside the ML area on either side of the road.
18.2	As committed by the Project Proponent, existing trucks of 10.5 Tonnes shall be replaced with higher capacity trucks of 25 Tonnes in phased manner to reduce traffic load and emissions per tonne/km.
18.3	Fugitive dust monitoring during transportation shall be monitored regularly at all the sensitive receptors and report shall be submitted quarterly to the Regional Office of MoEF&CC. Regular sprinkling shall be done on roads to suppress the dust at the source.
18.4	The Project Proponent shall adhere to the pollution control measures suggested by the Central Pollution Control Board (CPCB) in the environmental guidelines for crushing/screening activity.

19. Wheel Washing

S. No	EC Conditions
19.1	The wheel washing facility for the ore transport vehicles shall be provided at the exit point of the mine.

20. Underpass

S. No	EC Conditions
20.1	The Project Proponent needs to speed up the process of construction of underpass.

21. Settling Pond

S. No	EC Conditions
21.1	The Project Proponent needs to strengthen the settling pond with proper stone pitching in line with the design of settling pond considering the annual rainfall, flow rate, catchment area and its discharge.
21.2	The catch drains and siltation ponds needs to be regularly maintained to arrest silt and sediments flow from dumps.

22. Nursery

S. No	EC Conditions
22.1	The Project Proponent needs to develop a nursery adjacent to the mineral block (Survey no 72/4 in Bicholim Village) for an area of about 1100 sq.m in consultation with State Forest Department. PP shall develop theme-based gardens like medicinal gardens, horticulture gardens, spice gardens etc.,

23. Crushing/screening

S. No	EC Conditions
23.1	The Project Proponent needs to modify the crushing & screening units within 4 months from the date of issue of this EC.

24. Conservation Of Wildlife

S. No	EC Conditions
24.1	The Project Proponent needs to use modern equipment's such as Camera Traps for ensuring presence and movement of wild animals in the vicinity of the mine lease area as well as in study area in consultation with Wildlife Wing of Forest Department. Appropriate interventions shall be taken to minimise stress conditions for wild animals and to avoid Man-Animal conflict.
24.2	The Project Proponent needs to explore the possibility of using advanced/ latest mining technologies available so as to minimize the ecological impacts.
24.3	The Project Proponent should follow-up the status of implementation on Wildlife Conservation Plan from the Forest Officials and the same shall be submitted to the Ministry's Regional Office in the six monthly compliance report.

25. Continuous Ambient Air Quality Monitoring System (Caaqms)

S. No	EC Conditions
25.1	The Continuous Ambient Air Quality Monitoring Stations (CAAQMS) shall be installed and commissioned in consultation with CPCB. The real time data so generated should be displayed digitally at entry and exit gate of mine lease area for public display and shall be linked to server of CPCB/SPCB.

Standard EC Conditions for (Mining of minerals)

1. Statutory Compliance

S. No	EC Conditions
1.1	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.
1.2	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.
1.3	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.
1.4	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".
1.5	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.
1.6	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/ Tehsildar's Office for 30 days.
1.7	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/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 MoEFCC Regional Office for compliance and record.
1.8	The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred. 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.

2. Air Quality Monitoring And Preservation

S. No	EC Conditions
2.1	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, 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 03 months in front of the main Gate of the mine site.
2.2	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/ Central Pollution Control Board.

3. Water Quality Monitoring And Preservation

S. No	EC Conditions
3.1	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 MoEFCC 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.
3.2	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.
3.3	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 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 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 Ministry of Environment, Forest and Climate Change and its Regional Office, 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

S. No	EC Conditions
	basis.
3.4	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.
3.5	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 MoEFCC annually.
3.6	Industrial waste water (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.
3.7	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/Committee.

4. Noise And Vibration Monitoring And Prevention

S. No	EC Conditions
4.1	The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.
4.2	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.
4.3	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 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.

5. Mining Plan

S. No	EC Conditions
5.1	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.).
5.2	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 the MoEFCC and its concerned Regional Office.

6. Land Reclamation

S. No	EC Conditions
6.1	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.
6.2	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.
6.3	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.
6.4	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.

7. Transportation

S. No	EC Conditions
7.1	No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a 'bypass' road for the purpose of 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. [If applicable in case of road transport].
7.2	The Main haulage road within the mine lease should be provided with a permanent water sprinkling 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.

8. Green Belt

S. No	EC Conditions
8.1	The Project Proponent 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. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.

9.

S. No	EC Conditions
9.1	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.
9.2	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

S. No	EC Conditions
	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.

10. Public Hearing And Human Health Issues

S. No	EC Conditions
10.1	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, crèche 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.

11. Corporate Environment Responsibility (Cer)

S. No	EC Conditions
11.1	The Project Proponent shall submit the time- bound action plan to the concerned regional office of the Ministry within 6 months from the date of issuance of environmental clearance for undertaking the activities committed during public consultation by the project proponent and as discussed by the EAC, 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.

12. Miscellaneous

S. No	EC Conditions
12.1	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.
12.2	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.
12.3	The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MOEFCC & its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board.
12.4	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.

S. No	EC Conditions
12.5	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.
12.6	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 regrassing 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.
12.7	The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
12.8	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.
12.9	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.
12.10	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.

Additional EC Conditions

N/A

Annexure 2

Details of the Project

S. No.	Particulars	Details	
a.	Details of the Project	Block 1- Bicholim Mineral Block for Iron Ore	
b.	Latitude and Longitude of the project site	15.5723661773,73.9013208291 15.615004877,73.9525140757	
c.	Land Requirement (in Ha) of the project or activity	Nature of Land involved	Area in Ha
		Non-Forest Land (A)	0

S. No.	Particulars	Details	
		Nature of Land involved	Area in Ha
		Forest Land (B)	0
		Total Land (A+B)	478.5206
d.	Date of Public Consultation	Public consultation for the project was held on	
e.	Rehabilitation and Resettlement (R&R) involvement	NO	
f.	Project Cost (in lacs)	25000	
g.	EMP Cost (in lacs)	72	
h.	Employment Details		

Details of Minerals Products & By-products

Name of the Mineral to be mined	Classification of mineral [Major/Minor]	Production capacity in MTPA	Remarks
Iron Ore	Major	3.0	

The details of the project

The details of the project as ascertained from the document submitted by the Project Proponent and revealed from the discussions held during the meeting are given as under: -

- i. The proposed project activity is listed at schedule no. 1(a) Mining of Minerals and falls under Category "A" as the mining lease area is greater than 250ha and appraised at the Central level.
- ii. The mine lease area is located between Latitude: 15°34'20.518"N to 15°36'54.018"N and Longitude: 73°54'4.754"E to 73°57'09.51"E. The mine lease area falls under the Survey of India Toposheet No: D43B14 and falls in Seismic Zone-II.
- iii. The proposal was earlier considered in the 20th EAC (Non Coal Mining) meeting held during 21-22 September, 2023 wherein the EAC deferred the proposal for want of requisite information and site visit report of the subcommittee. Accordingly, site visit was carried out during 29-31 October, 2023 and then the Project Proponent submitted the information along with compliance of site visit report on 04.12.2023 in Parivesh portal and hence the proposal was considered in the 24th EAC (Non-Coal Mining) meeting held during 26-28 December, 2023.

Based on observation of EAC in its meeting held during 21-22 September, 2023 and observations of sub-committee during site visit (29-31 October, 2023), the project proponent provided the following compliances:-

S . N o	Observation of subcommittee during site visit held during 29-31 October, 2023	Reply by Project Proponent
1	The Project Proponent needs to submit the techno economic feasibility report for laying Over Land Belt Conveyor (OLBC) from the mine lease area to Sarmanas Jetty.	The Project Proponent submitted that transportation route from mine site to jetty currently covers a total distance of 5.48 kms (4.54 dedicated road and 0.94 km MDR-20 Public Road). Based on the present capacity of the tippers, 1205 trips are required per day and the present road network is adequate for the purpose with widening and strengthening of some patches. The preliminary Techno-Economic feasibility study has been undertaken and prima facie it does not look feasible to switchover to OLBC system considering the terrain of the likely route having mounds and low-lying areas, vegetation/forest patches and its likely degradation, accessibility, environmental impacts and safety issues, technologies available, cost of the system, implementation period via-a-vis remaining reserves in the mining lease.

		<p>The Project Proponent also submitted the preliminary Techno-Economic feasibility issues for laying Over Land Belt Conveyor (OLBC) from the mine lease area to the Sarmanas Jetty along with cost and timeline comparison for conveyor system and dedicated road.</p>
2	<p>The subcommittee asked the Project Proponent to submit the ecology restoration plan for mined out pits for using as Water reservoir/Pisci culture.</p>	<p>The Project Proponent submitted that the Ecology Restoration or Mine Reclamation activities at Block I Bicholim Mineral block will be carried out concurrently with mining operations. The company has in-house experienced team having experience of mine land reclamation. The company also proposes to collaborate and take support of various reputed institutes and consultancy firms in ecology restoration of the area more importantly the local stake holders will be consulted in the process of ecology restoration.</p> <p>The Project Proponent also submitted that at conceptual stage, 20 ha area will be converted into water reservoir & 293.5 ha will be converted into backfilled area. Backfilled area will be reclaimed & rehabilitated by the plantation. At conceptual stage around 105 ha (21.94% of the total project area) of land will be brought under plantation. The plantation will comprise of saplings of native species which are generally grown in the state of Goa. The plantation would be a mix of various forest and fruit tree species and technical advice would be taken from state forest and agriculture departments. The saplings will be procured from various nurseries like forest department nursery, nurseries developed by locals and also from companies in-house root trainer nursery.</p> <p>Further, the Project Proponent submitted that the Block-I Bicholim Mineral Block is already having a 7.5m wide green belt all along the mine block boundary except the areas where the mine block shares a common boundary with adjoining mine block. A 50m green belt exists towards the habitation within the lease and the same would be further strengthened and maintained. A dedicated 200m green belt would be developed and maintained towards the Idgah area. A density of 2500 saplings per ha will be maintained. Extensive plantation would also be done along the sides of connecting roads.</p> <p>The waste dump slopes will be covered with laterite material and then with biodegradable geotextile mats which will prevent soil erosion of the dump slopes and thus will facilitate the growth of native species. Grass seeds will be sprinkled on the dump slopes so that the same germinate during rains. The top of dump areas / levelled areas will be properly planned and developed in to theme based gardens which can be a attraction for school students, tourist etc.</p>

		Some of the mined-out pits will partially backfilled and retained as water bodies. For instance, 1 Top pit and 5 Bottom pits will be finalized by end of first mine plan period and will be taken up for ecology restoration initiatives. The company will collaborate with state fisheries department to develop Pisciculture in the water body developed in the mine pits. Local youth will be provided training through the fisheries department so that they manage and maintain the Pisciculture project.
3	The subcommittee noted that the transfer of material from one pit to other working pit will lead to transportation issues. The subcommittee asked the Project Proponent to identify the shortest lead distance and also to explore the possibility of concurrent backfilling. The Project Proponent also needs to submit the sequential stage wise mining in top and bottom working pits and their backfilling plan.	<p>The Project Proponent submitted that as suggested by the Hon'ble Committee detailed study of mineral transportation from one pit to another pit including sequential mining has been carried out. The company has explored the possibility of concurrent backfilling and it will be possible only from 5th to 10th year.</p> <p>The Project Proponent submitted the google image showing the existing available pits for backfilling and proposed pits for backfilling. The Project Proponent also submitted the details of existing pits, area, depth and volume for backfilling and also the proposed working pits, area, depth and volume available for backfilling. Further, the Project Proponent submitted the year wise sequential mining & backfilling plan.</p>
4	The Project Proponent needs to submit the action plan for strengthen the settling pond with proper	The Project Proponent submitted that at conceptual stage, total 12 no.s of settling ponds will be developed and these will be strengthened by the stone pitching. About 6 numbers of earlier mined out abandoned pits and 12 nos of interlinked siltation ponds have been identified for collecting surface run off from respective catchment sub basins. The Project Proponent also submitted the map showing the settling ponds and drainage network and design of settling ponds.

	<p>stone pitching in line with the design of settling pond considering the annual rainfall, flow rate, catchment area and its discharge. The action plan for monitoring the water level and water quality before discharge needs to be submitted.</p>	<p>The Project Proponent submitted that a total of 5.49 Million CuM of void volume is available for surface run-off holding in six pits having a cumulative area of 58.11 Ha which have a total catchment area of 160 Ha. During entire mine life water holding capacity of 5.49 or more than 5.49 Million CuM will be available at any time. Further, a total 12 nos of settling ponds have been earmarked within and outside the ML Area for collecting surface run off. A total of 0.38 Million M3 of void volume is available for surface run-off holding in 12 nos settling ponds having a cumulative area of 8.84 Ha. Considering five fillings in a year, the gross volumes of settling ponds will be 1.90 Million M3.</p> <p>Further, the Project Proponent submitted that entire monsoon runoff is channelized into mine pits and supernatant water flows into series of settling ponds through drains. The clear water is allowed to naturally overflow by Header arrangements or through check dams. In case required, Lime or combination of Lime and flocculent is used in the mine pit or settling pond so that the particles settle, and clear water is discharged. The discharge water is monitored regularly so that water quality meets the prescribed limits. The inhouse Environment management cell will undertake the regular monitoring and analysis of discharge water through Environment laboratory recognized by MoEF&CC. The monitoring reports will be submitted to Goa State Pollution Control Board on monthly basis and MoEF&CC Regional office on six monthly basis.</p> <p>Surface water samples shall be collected at 8 locations which include all the mine discharge points and upstream and downstream of Bicholim and Asnora river. Samples shall be collected once a month. The parameters listed in IS: 2296 shall be monitored. During monsoon season, in addition to the monthly monitoring, all the discharge points will be regularly monitored (on all the rainy days) and the TSS levels will be checked.</p>
5	<p>The design of garland drain around the waste dumps to divert the water to settling ponds and the measures to be taken to arrest the suspended solids needs to be submitted.</p>	<p>The Project Proponent submitted that the dimensions of the drains will be maintained with width of 2m and 1.5 m in depth everywhere in the mine. A proper height will be maintained on the sides of the garland drain so that water does not get overflowed from the drains. The available garland drains are 11313 m in length which covers all the dumps within the mine lease area. The same will be strengthened and maintained before the onset of monsoon. The daily average surface run-off is estimated as 14003 m³. The garland drains have the capacity to accommodate instant volume of 33939 m³ as per above dimensions. Therefore, garland drains capacity is more than sufficient to take care of average daily surface run off during raining period. Additional drains are proposed to take</p>

	<p>The measures to be taken for preventing the soil erosion on slope of waste dumps needs to be submitted.</p>	<p>care of peak run off during the plan period. Therefore, water management structures comprising of drains, settling ponds and mined out pits are available as well as planned to address the catchment area run-off for conceptual period.</p> <p>The Project Proponent also submitted the measures to be taken to arrest the suspended solids and for preventing the soil erosion on slopes of waste dumps for preventing the soil erosion on slope of waste dumps which are as follows:</p> <ol style="list-style-type: none"> i. Inward slope will be provided to all the dump benches so that the water doesn't flow over the slope and erodes the dump slope surface ii. Covering the finalised dump slope with lateritic material and then covering with coir geotextiles iii. Use of ERW pipes between benches to channelise the surface runoff water and diverting to settling ponds. iv. Boulder walls 1.5m ht and 2m wide will be provided at the toe of the dump to arrest the flow of silt. v. Garland drains around the dump is constructed 1m bottom width, 2m top width and 1m deep with a length of 6100 m to divert water to settling pond for arresting the suspended solids. vi. Use of Stylo grass seeds and Glyricidia cuttings at the onset of monsoon to create green cover on the dump slopes. vii. Annual Plantation of native species on waste dump. viii. Safety green belt /barrier of 50 mts shall be maintained near the Assonora river from the mine pit. ix. Annual de-siltation of the settling ponds, drains. x. Use of lime and flocculants in case required so as to settle the suspended solids in settling pond. 																		
6	<p>The Project Proponent needs to submit the action plan for installing permanent water sprinklers.</p>	<p>The Project Proponent submitted that permanent water sprinklers with 3.40 km length along the haul road within the ML area and 2.80 km length outside the ML area on either side of the road will be installed. Sprinklers will be spaced at 12m distance covering 6m radius at 180 degree. Estimated budget for the installation of the same is Rs. 191.60 Lakhs.</p> <table border="1" data-bbox="512 1552 1385 1783"> <thead> <tr> <th>S. No</th> <th>Description</th> <th>Cost (Rs. In Lakh)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Civil Works</td> <td>20.0</td> </tr> <tr> <td>2</td> <td>Pump & Sprinkler System</td> <td>88.0</td> </tr> <tr> <td>3</td> <td>Pipeline</td> <td>75.60</td> </tr> <tr> <td>4</td> <td>Electrical Works</td> <td>8.0</td> </tr> <tr> <td colspan="2" style="text-align: center;">Total</td> <td>191.60</td> </tr> </tbody> </table> <p>The Project Proponent also submitted the map showing the layout of proposed water sprinklers within mine lease area and along dedicated road.</p>	S. No	Description	Cost (Rs. In Lakh)	1	Civil Works	20.0	2	Pump & Sprinkler System	88.0	3	Pipeline	75.60	4	Electrical Works	8.0	Total		191.60
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7	<p>The Project Proponent needs to</p>	<p>The Project Proponent submitted that Crushing & screening units will be modified within 4 months after obtaining the Clearances. Budget proposed for the same is Rs. 6.97</p>																		

	<p>submit the action plan and timeline to modify the crushing and screening units. The Project Proponent also needs to submit the material flow sheet and material balance.</p>	<p>Crore. The Project Proponent also submitted the flow Sheet of Crushing & Screening Unit.</p>
8	<p>The Project Proponent needs to submit the action plan for developing their own nursery by mentioning the details of the area to be covered, species to be planted and budget proposed. Most of the standing vegetation in the lease area constitutes of Acacia auriculiformis and Casuarina equisetifolia and it is further invading the open areas through natural regeneration. The invasion may be checked through planting native</p>	<p>The Project Proponent submitted that it is proposed to develop nursery adjacent to the mineral block (Survey no 72/4 in Bicholim Village). Around 1100 sq.m of area will be utilized for the nursery. A budget of Rs. 5 lakh is kept for the same. The nursery will comprise of following:</p> <ol style="list-style-type: none"> i. A poly house/ nursery shed will be developed where in a root trainer nursery will be established. ii. Production area wherein various jobs like filling of root trainers/polybags will be undertaken store room wherein the nursery equipment's will be stored iii. Only native / local species of various horticultural and forest species will be grown in inhouse nursery or sourced from forest department nursery for planting in the finalised areas within the Mineral block. iv. Necessary technical support will be taken from state forest department. Company also carries out collaborative mine reclamation projects in association with research institutes like NEERI, Goa university etc. v. Horticultural species like Mango, Cashew, Ber, Aonla, Jambul, Tamarind, Jackfruit, citrus species, etc will be grown vi. Forest species like various Terminalia tomentosa, Terminalia bellerica, Bauhinia species, Teak, Cassia fistula, Arjun, Assan, lagerstromia species, Shiwan, Ficus species, Pongamiapinnata, Reetha, Rain tree, Pangara, Peltoforum, Palas, Saton, Mahagony, bamboo species etc. <p>The Project Proponent also submitted that during plan period an area of 9.7288 ha (24,322 no. of plants) will be developed under 7.5m safety zone, Buffer towards habitation, archaeological site, & river and an area of 9.4435 ha (23,609 no. of plants) will be developed on backfilled area. A budget of Rs 28.83 Lakhs has been earmarked towards the same.</p>

	species in the region.																																											
9	<p>The Project Proponent needs to ensure that whether any other Schedule-I species has been added as per latest Wildlife (Protection) Amendment Act 2022 or not. Accordingly, the Project Proponent shall submit the revised authenticated Schedule-I species. The Project Proponent also needs to submit the breakup of the conservation activities proposed under Wildlife Conservation Plan.</p>	<p>The Project Proponent submitted that the authenticated list of Schedule I Species as per Indian Wildlife Protection Act 1972 as amended Gazette Notification of Wildlife (Protection) Amendment Act, 2022 has been obtained from the Dy. Conservator of Forests Wildlife & Eco-Tourism (North), Panji-Goa vide letter no. 1-576-WL&ET(N)/2023-2024/3312, dated 27.11.2023. According to this authenticated list, 29 Schedule I Species have been recorded within 10 km study area.</p> <p>As suggested by the Hon'ble EAC the company revised the break-up of conservation activities proposed under Wildlife Conservation Plan and same will be finalized after discussion with the Forest Dept. The break-up of the conservation activities proposed under Wildlife Conservation Plan are as follows:-</p> <table border="1"> <thead> <tr> <th>S.No</th> <th>Particulars</th> <th>1st year</th> <th>2nd year</th> <th>3rd year</th> <th>4th year</th> <th>5th year</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Enrichment of forest areas with suitable indigenous species for wild life habitat improvement</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>Creation/ maintenance of habitat for herbivores/ avian fauna</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>Management interventions for facilitating water availability to the wild life in forest areas/ Improvement of soil and water regime of forest areas</td> <td>12</td> <td>12</td> <td>12</td> <td>12</td> <td>12</td> </tr> <tr> <td>4</td> <td>Financial support to the department for conducting awareness campaigns for various stakeholders</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>Financial support to the department for celebrating events like Wildlife week</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	S.No	Particulars	1 st year	2 nd year	3 rd year	4 th year	5 th year	1	Enrichment of forest areas with suitable indigenous species for wild life habitat improvement						2	Creation/ maintenance of habitat for herbivores/ avian fauna						3	Management interventions for facilitating water availability to the wild life in forest areas/ Improvement of soil and water regime of forest areas	12	12	12	12	12	4	Financial support to the department for conducting awareness campaigns for various stakeholders						5	Financial support to the department for celebrating events like Wildlife week					
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			and sponsoring the prizes for the competitions					
			Total	Rs 60.0 Lakhs				
10	The Project Proponent needs to submit the map demarcating the surface features in the mine lease area and their safety distances left/maintained as per mines acts and rules.	The Project Proponent submitted the map demarcating the surface features in the mine lease area. The Project Proponent also submitted the safety distances left/maintained as per mines acts and rules as given below in table:						
		S.No	Features inside lease	Distance from Ultimate Pit Limit (UPL)	Statutory Distances as per MMR			
		1	ManasbagMulgao village	120 m	45 m			
		2	Mulgao village	58 m				
		3	Lamgao village	56 m				
		4	Manaswada Govt. School within habitation	138 m (12 Students)	45 m			
		5	Gaonkarwada Govt. School within habitation	190 m (not functional)				
		6	Old Lairai Temple	126m (From 5 Bottom Backfilling site)				
		7	Mahadev&Sateri Temple	280 m	45 m			
		8	Kelbai Temple	205 m				
		9	Sateri Temple	130 m				
		10	Matrai Temple	150 m				
		11	Nimuzgah	210 m				
		12	Lamgao Caves	300 m	45 m			
11	The Project Proponent needs to provide proper treatment of channels and nallas flowing in the lease area for soil and water conservation. Scientifically designed and placed check dams and other engineering	The Project Proponent submitted that Silt load study was carried out through Center for Advance studies department of geology, University of Delhi and it was concluded that, all the structures made for the settling of sediments are found to be more than sufficient to accommodate sediments even during peak rainfall. The Project Proponent submitted that the <ul style="list-style-type: none"> a) Total length of the Garland drain = 11313 m b) Peak rainfall = 154 mm/day c) Peak runoff in a day = 110590 m³ d) Capacity of garland drain = 33939 m³. The garland drains are made such that from upstream to the downstream where the drains are meeting the settling ponds will show decrease in elevation, to maintain a free-flowing gradient of rainfall runoff. The dimension of the drains is maintained to be 2m in width and 1.5m in depth at everywhere in the mine site. A proper height has been maintained on the						

	structures at different places can help control the erosion and loss of productive soil. Necessary study from competent institution/individuals may be done for this purpose.	sides of the garland drain so that water don't get over-flooded from the drain.																																																															
S N o	Observation of EAC in its meeting held during 21-22 September, 2023	Reply by Project Proponent																																																															
1	The site visit report of the subcommittee.	The Project Proponent submitted the observations to the subcommittee recommendations during the site visit 29-31 Oct., 2023 are complied and submitted in Parivesh portal.																																																															
2	The Project Proponent needs to revisit the plan for backfilling with clearly indicating the voids area and the capacity available/required for backfilling.	<p>The Project Proponent submitted that 5 numbers of earlier mined out pits have been identified for backfilling purpose to accommodate waste to be generated in future besides additional pits to be made available progressively with mining till conceptual period. The physical details of available pits to be converted into backfilled areas are as follows:</p> <table border="1"> <thead> <tr> <th>Mine pit location/ ID</th> <th>Total area of pit (ha)</th> <th>Area Available for Backfilling (Ha)</th> <th>Depth (m)</th> <th>Top RL (m)</th> <th>Bottom RL (m)</th> <th>Vol (m³)</th> </tr> </thead> <tbody> <tr> <td>1 Top</td> <td>22.4367</td> <td>20.9942</td> <td>99</td> <td>62</td> <td>-37</td> <td>19356183</td> </tr> <tr> <td>2 Top</td> <td>13.0803</td> <td>9.9465</td> <td>60</td> <td>60</td> <td>0</td> <td>2968920</td> </tr> <tr> <td>3 Top</td> <td>16.0596</td> <td>13.1650</td> <td>70</td> <td>110</td> <td>40</td> <td>2240000</td> </tr> <tr> <td>³/₄ Bottom</td> <td>-</td> <td>-</td> <td>109</td> <td>102</td> <td>-7</td> <td>-</td> </tr> <tr> <td>5 Top</td> <td>37.0242</td> <td>35.7242</td> <td>78</td> <td>98</td> <td>50</td> <td>14213124</td> </tr> <tr> <td>5 Top CB</td> <td>-</td> <td>-</td> <td>77</td> <td>124</td> <td>47</td> <td>-</td> </tr> <tr> <td>5 Bottom</td> <td>15.4196</td> <td>12.0840</td> <td>92</td> <td>87</td> <td>-5</td> <td>7035240</td> </tr> <tr> <td>Total</td> <td>104.0204</td> <td>91.9139</td> <td></td> <td></td> <td></td> <td>45813467</td> </tr> </tbody> </table>	Mine pit location/ ID	Total area of pit (ha)	Area Available for Backfilling (Ha)	Depth (m)	Top RL (m)	Bottom RL (m)	Vol (m ³)	1 Top	22.4367	20.9942	99	62	-37	19356183	2 Top	13.0803	9.9465	60	60	0	2968920	3 Top	16.0596	13.1650	70	110	40	2240000	³ / ₄ Bottom	-	-	109	102	-7	-	5 Top	37.0242	35.7242	78	98	50	14213124	5 Top CB	-	-	77	124	47	-	5 Bottom	15.4196	12.0840	92	87	-5	7035240	Total	104.0204	91.9139				45813467
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3 Top	16.0596	13.1650	70	110	40	2240000																																																											
³ / ₄ Bottom	-	-	109	102	-7	-																																																											
5 Top	37.0242	35.7242	78	98	50	14213124																																																											
5 Top CB	-	-	77	124	47	-																																																											
5 Bottom	15.4196	12.0840	92	87	-5	7035240																																																											
Total	104.0204	91.9139				45813467																																																											

Further, the details of pits to be made available progressively with mining till conceptual period and converted into backfilled areas are as follows:

Mine pit location/ ID	Total area of pit (ha)	Area Available for Backfilling (Ha)	Depth (m)	Top RL (m)	Bottom RL (m)	Vol (m ³)	Void availability for backfilling
2 Top	43.1944	39.2331	116	91	-25	10518996	5 th year
³ / ₄ Bottom	39.4606	34.6140	169	102	-67	15412643	End of 3 rd year
2 Top	68.52	65.6420	113	103	-10	47912000	6 th to 10 th year
3 Top/2 Top combined	38.2545	36.6500	118	108	-10	38161200	11 th to 13 th year
4 Top/3 Top Combined	-	-	84	73	-11	-	11 th to 13 th year
5 Top CB Pit	-	-	168	94	-74	-	11 th to 13 th year
Total	189.425	176.1391				112004839	

As shown in the above tables, five numbers of earlier worked out pits will have void volume of 45.81 million m³ and during the Plan & Conceptual period progressive excavation, 112 million m³ of void volume will be available for backfilling. Therefore, a total of 157.98 million M³ of void volume will be available for backfilling in mined out pits having a cumulative area of 268.05 Ha. Additionally, area of 62 Ha will be available as voids including 22 ha of water reservoir for storing rain water.

The Project Proponent also submitted that the Conceptual waste generation shall be 124.9 million Cum which will have a swelled volume of 149.90 million CuM (say 150 million CuM). The 0.2 million CuM of swelled waste will be dumped over top of backfilled pits as surface dumps. Sufficient space is

		available to accommodate waste generated during life of mine considering swell factor of 1.2. Annual waste generation is in range of 4.35 to 12.58 million cum per year with an average of 9.61 million cum per year considering life of the mine as 13 years based on the presently available mineable reserves. Life of the mine may reach upto 30 years if entire resources are converted to reserves by removing all encumbrances.														
3	The Project Proponent needs to submit the design of settling ponds by considering the annual rainfall, catchment area and its discharge.	<p>The Project Proponent submitted that at conceptual stage, total 12 no.s of settling ponds will be developed and these will be strengthened by the stone pitching. About 6 numbers of earlier mined out abandoned pits and 12 nos of interlinked siltation ponds have been identified for collecting surface run off from respective catchment sub basins. The Project Proponent also submitted the map showing the settling ponds and drainage network and design of settling ponds.</p> <p>The Project Proponent submitted that a total of 5.49 Million CuM of void volume is available for surface run-off holding in six pits having a cumulative area of 58.11 Ha which have a total catchment area of 160 Ha. During entire mine life water holding capacity of 5.49 or more than 5.49 Million CuM will be available at any time. Further, a total 12 nos of settling ponds have been earmarked within and outside the ML Area for collecting surface run off. A total of 0.38 Million M3 of void volume is available for surface run-off holding in 12 nos settling ponds having a cumulative area of 8.84 Ha. Considering five fillings in a year, the gross volumes of settling ponds will be 1.90 Million M3.</p> <table border="1"> <thead> <tr> <th>Particulars</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Catchment area of pits</td> <td>160 ha</td> </tr> <tr> <td>Rainfall received</td> <td>160 ha x 3500 mm = 5.6 Million CuM</td> </tr> <tr> <td>Effective surface runoff to be accumulated in voids</td> <td>5.6 x 0.7 = 3.92 Million CuM</td> </tr> <tr> <td>Pits water holding capacity</td> <td>5.49 Million CuM</td> </tr> <tr> <td>Gross settling ponds capacity</td> <td>1.90 Million CuM</td> </tr> <tr> <td>Total water holding capacity of mined pits and settling ponds</td> <td>7.39 Million CuM</td> </tr> </tbody> </table> <p>Further, the Project Proponent submitted that since total water holding capacity in pits and settling ponds (7.39 Million CuM) is more than rainfall and surface runoff volume from catchment (3.92 Million CuM), there is sufficient space for effective surface runoff management in during extreme precipitation times. The dimensions of the drains to be maintained will be 2m in width and 1.5 m in depth everywhere in the mine. A proper height will be maintained on the sides of the garland drain so that water does not get over-flooded from the drains. The available garland drains are 11313 m in length and daily average surface run-off is estimated as 14003 m3. The</p>	Particulars	Details	Catchment area of pits	160 ha	Rainfall received	160 ha x 3500 mm = 5.6 Million CuM	Effective surface runoff to be accumulated in voids	5.6 x 0.7 = 3.92 Million CuM	Pits water holding capacity	5.49 Million CuM	Gross settling ponds capacity	1.90 Million CuM	Total water holding capacity of mined pits and settling ponds	7.39 Million CuM
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		<p>garland drains have capacity to accommodate instant volume of 33939 m³ as per above dimensions. Therefore, garland drains capacity is more than sufficient to take care of average daily surface run off during raining period. Additional drains are proposed to take care of peak run off during the plan period. Therefore, water management structures comprising of drains, settling ponds and mined out pits are available as well as planned to address the catchment area run-off for conceptual period. The overflow discharge water will be regularly monitored so that quality of water is maintained as per the prescribed standards and always clear water from ponds / pits meet the natural system. In case required, water treatment would be done in the pits by using lime and flocculants or other organic chemicals.</p>																											
4	<p>The Project Proponent needs to bypass the public road and also to explore the possibility of increasing the capacity of the truck so as to reduce the no. of trips. The EAC opined that the Project Proponent needs to revisit the traffic load by considering the cycle time and waiting time. The Project Proponent needs to submit the action plan for strengthening the road and for converting the unpaved road into concrete road.</p>	<p>The Project Proponent submitted the map showing the transportation route comprising of dedicated road corridor and public road. The total travel distance upto Jetty is 5.48 kms (4.54 km dedicated road and 0.94 km MDR-20 Public Road). Traffic load and effective distance between two trucks are as follows:-</p> <table border="1" data-bbox="512 927 1383 1227"> <thead> <tr> <th>S.No</th> <th>Transportation working days</th> <th>Quantity (In TPA)</th> <th>Tonnes / Day</th> <th>Trips per day</th> <th>Mode of transport</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>237</td> <td>30,00,000</td> <td>12658</td> <td>1205</td> <td>Road</td> </tr> <tr> <td colspan="4">Total Trips per day</td> <td>1205</td> <td></td> </tr> </tbody> </table> <p>The Road width details for various segments are as follows:</p> <table border="1" data-bbox="512 1301 1350 1451"> <thead> <tr> <th colspan="2">Dedicated Road corridor</th> <th>Public Road</th> </tr> </thead> <tbody> <tr> <td>3.31 km</td> <td>1.23 km</td> <td>0.94 km</td> </tr> <tr> <td>12-15 mts wide Road</td> <td>7 mts wide Road</td> <td>7 mts wide Road</td> </tr> </tbody> </table> <p>Further, the Project Proponent submitted the following details:-</p> <ol style="list-style-type: none"> Capacity of truck is 10.5 tons as per directives of Deptt. of Mines & Geology, Goa Total Handling per day is 12658 tons /day Transportation timings are 6.00 am to 7.00 am, 8:00 am to 12.45 pm and 2:00 pm to 5.45 pm. Therefore, the effective transportation time is 9.30 hrs. Per Hour Handling is: 1332 tons/hour No. of Vehicles per Hour (One way): 127 vehicles No. of Vehicles per Hour (to and fro): 254 vehicles The Speed of vehicle is 25 KMPH and the lead distance is 5.48 kms The time taken for 5.48 km is 13.15 mins for each truck and loading time is 1min, weighment time at both source location is 2 min, Tarpaulin tying and untying 	S.No	Transportation working days	Quantity (In TPA)	Tonnes / Day	Trips per day	Mode of transport	1	237	30,00,000	12658	1205	Road	Total Trips per day				1205		Dedicated Road corridor		Public Road	3.31 km	1.23 km	0.94 km	12-15 mts wide Road	7 mts wide Road	7 mts wide Road
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		<p>time is 2 min, unloading time 1 min and waiting time 10 min.</p> <p>ix. Each truck length is 15'. 5" (4.58 m)</p> <p>x. Distance from truck to truck is 5 m both side = 10 m</p> <p>xi. Each vehicle occupies a min. distance of 14.58 m = ~ 15 m</p> <p>xii. The length of road is 5.48 Km = 5480 m</p> <p>xiii. No. of vehicle which can travel on this road for one side= 5480 /15 = 365, However we would be plying only 127 trucks hence effective distance between two vehicles is 43 m.</p> <p>The Project Proponent submitted the following mitigation measures for transportation:-</p> <ol style="list-style-type: none"> i. Public road is hot mixed and same will be maintained. ii. Dedicated road is proposed to be hot mixed in phased manner. iii. Entire Dedicated transportation route is surrounded by thick Green Belt iv. Transportation vehicles shall be properly maintained to minimize the exhaust emission. v. Regular tests shall be carried out to check exhaust emission and PUC certification of transportation vehicles at prescribed interval. vi. Transportation trucks will be loaded with prescribed capacity and covered with tarpaulin before leaving mines premises. vii. Overloading of the material will be avoided. viii. Regular monitoring of the emission levels. ix. Over speeding of Vehicle will not be allowed. x. Traffic Marshals shall be provided for regulating movement of vehicles as well as for safety of persons. xi. Training will be given to all drivers about safe driving. xii. Regular water sprinkling by means five hired water tanker of 10KL capacity on haul road and Loading points will be carried out xiii. Used of fixed dust suppression system on haul roads xiv. Installation of two wheel washed system (one each at the exit of the dedicated road and jetty exit respectively xv. Manual and mechanised machines for road sweeping xvi. Washing of mine exit points/Junctions (Mayem, Pilgao and Jetty exit area) after transportation hours/at night with water tanker having pipe arrangements xvii. Underpass proposed at Mayem junction to prevent interface with public. <p>The Project Proponent submitted that the regular mining in the state of Goa stopped since 2012 (it started for brief period in 2018 and again stopped). The truck owners who have already invested in the 10.5 T trucks are severely affected due to the</p>
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		<p>stoppage of mining activity and are against procurement of new / high-capacity trucks, till their losses are covered. The company has already conducted series of meetings with the truck owner's associations for the higher capacity trucks and the truck owners are not agreeing to any changes in short term of 5 years. However, the engagement with the truck owners for higher capacity truck will continue. Company will also engage with all stake holders to explore the feasibility for installing conveyor belt system for transportation in near future, if permitted.</p> <p>The public road which is used for transportation is only 0.94 km long and the same is a hot mix road and in well maintained condition. The dedicated road of 4.54 km has very thick green belt on both the sides. There is no habitation along the dedicated road. Nearest habitation will be more than 250m from the road. The dedicated road before joining the public road is concreted and provided with the wheel wash system. Dedicated road sweeping machine will also be deployed to maintain the public road clean. The company also undertakes to hotmix the stretch of 4.54 km of dedicated road in a phased manner in three years' time frame. The estimated cost towards hot mixing is worked out as INR 18 crores.</p>
5	<p>Since the mine lease area is sharing the Mayem Forest common boundary, the Project Proponent needs to submit the letter from the State Forest Department regarding the involvement of forest land in the mine lease area.</p>	<p>The Project Proponent submitted the letter from the Office of the Dy. Conservator of Forests, North Goa Division Sensitivity: Public (C4) vide letter no. 5/MINES-GEN/DCFN/TECH/2023-24/56, dated 12.04.2023 stating that the detail of village wise Survey No.s within Block-1 of Bicholim Mineral block was verified and found that the area under the above mentioned Survey Nos is not a Govt. Forest and also does not identified as Private Forest by State Level Expert Committee headed by Sawan/Dr. Karapurkar/V.T. Thomas.</p>
6	<p>The Project Proponent needs to submit a letter from the Department of Geology and Mining, Government of Goa clarifying</p>	<p>The Project Proponent submitted the letter from the Directorate of Mines & Geology vide Lr. No. 03/24/2023/Major/Mines/Part/489 dated 25.07.2023 stating that</p> <ol style="list-style-type: none"> M/s. Vedanta has been declared as Preferred Bidder for Bicholim Mineral Block- Block I through an auction process conducted by the Government of Goa as per the Mineral Auction Rules, 2015. M/s. Vedanta Ltd., was not the erstwhile lessee of the said Block prior to auction.

	<p>whether any illegal mining within the mine lease area has been carried out or not and whether the same has been carried out by M/s. Vedanta Limited or not?</p>	<p>c) The matter of illegal mining in the State of Goa is under investigation by the Special Investigation Team (SIT).</p> <p>The Project Proponent also submitted that the Block-I Bicholim Mineral Block was earlier operated by Sesa Mining Corporation Ltd. (SMCL) formerly known as Dempo Mining Corporation Ltd. Pursuant to Supreme Court Judgment in Goa Foundation order dated 07.02.2018, all the mining leases granted by the State Govt. were cancelled. Thereafter, State Govt. in terms of the said order and as per the provisions of MMDR Act put this block for auction as a fresh lease grant. The e-auction process was conducted in accordance with the Tender Document for said Mineral Block. Vedanta Limited emerged as the highest qualified bidder having submitted the highest final price offer and was declared as the preferred bidder under Rule 9(9) (iii) of auction Rules. Further, upon submission of the first Installment, being 20% of the upfront payment, Government of Goa issued a Letter of Intent (LOI) vide letter no. DMG/25/Auction Cell/LOI-function/2023/2801 dated 13.01.2023 for the grant of a mining lease for Block-I Bicholim Mineral Block in Bicholim, Bordem, Lamgao, Mulgao, Mayem&Sirigao Villages, of Bicholim Taluka, North Goa District, Goa State over an area of 478.5206 Ha over a period of 50 years.</p>
7	<p>The Project Proponent needs to submit the video recording of the public hearing.</p>	<p>The Project Proponent submitted that Goa State Pollution Control Board vide their letter No. 11/15/2023-PCB/Leg/13555 dated 22/09/2023 submitted all the documents related to public hearing including public hearing video to the Member Secretary, EAC (Non Coal Mining).</p>

iv. Details of Terms of Reference (ToR):

Date of application	File. No/ Proposal No	Consideration	Details	Date of accord
16.03.2023	<p>F.No: IA-J-11015/3/2023-IA-II(NCM)</p> <p>IA/GA/MIN/422323/2023</p>	3-4 May, 2023	<p>Terms of Reference (ToR) to M/s Vedanta Limited for mining of Iron Ore in Bicholim Mineral Block – Block 1 (Auction Block) with proposed production capacity of 3.0 MTPA, Waste: 25.162 MTPA (Total Excavation: 28.162 MTPA) along with crushing and screening plant</p>	16.06.2023

			capacity of 4.0 MTPA in the mine lease area of 478.5206 ha, located in Bicholim, Bordem, Lamgao, Mulgoa, Mayem & Sirigao Villages of Bicholim Taluka of North Goa District, Goa	
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v. Details of Mine Lease:

- a) The Project Proponent has submitted the Letter of Intent (LoI) granted by the Government of Goa vide Lr No: DMG/25/Auction Cell/LOI-function/2023/2801 dated 13.01.2023 for grant of mining lease for Block I - Bicholim Mineral Block for Iron Ore in Bicholim, Bordem, Lamgao, Mulgao Mayem & Sirigao villages, Bicholim Taluka, North Goa District over an area of 478.5206 Hectare for a period of 50 (fifty) years in pursuant to Rule 10(2) of the Auction Rules. This letter of intent is valid for a period of 3 (three) years from the date of its issuance.

vi. Land Use/Land Cover of the Mine Lease Area:

Private land	421.1153 Ha
Government land	57.4053 Ha
Total Mining lease area (MLA)	478.5206 Ha
Private land for crusher, workshop & other infrastructure outside the MLA	Not Applicable

vii. Details of Mining Plan:

Review and Mining Plan approved by Indian Bureau of Mines, Goa	Letter No.	No. MCDR-MPC 1 2023-GOA-IBM_RO_GOA
	Date	26.05.2023
	Mine Lease Area	478.5206 Ha
	Mineral	Iron Ore (Major Mineral)
Mining Parameters	Quantitative Description	
Method of Mining	Opencast mechanized mining without Drilling & Blasting	
Drilling/Blasting	Not Applicable	
Total Reserves and Resources	84.73 Million Tonnes	
Proved Mineral Reserve	36.071 Million Tonnes	
Life of mine	30 years	
Bench Height	7 m	

Bench Width	10 m
Individual bench slope	70°
Overall pit slope	<26°
RoM output size	Less than 500 mm
Crushing/Screening	Mobile Dry Crushing and Screening plant shall be available within the proposed mine to handle 4 MTPA of crude ore. The primary crusher will consist of 1 no. of Jaw crusher of capacity 120 TPH with an input feed of -500mm and shall produce output of -70 mm. It shall be followed by secondary crushers, 2 no.s of capacity 300 TPH and 200 TPH respectively. The input feed size shall be -70mm and output feed size obtained shall be -40mm. The Screening Plants of capacity -600TPH shall be installed where input the feed size shall be -70mm to obtain product of -40mm lumps & -10mm fines.
Transportation details	ROM/Iron ore or Screened/crushed material will be transported by 10.5 Tonne trippers from Mine to Sarmanas jetty through a dedicated road. The total distance from the mine to Jetty is 5.58 km of which 0.94 km stretch is public road and remaining 4.64 km is company owned dedicated road.
Dumpers capacity	40 tonne (within mines)
Waste handling and Disposal	During the mining period, the waste generated by mining will be temporarily stacked within the mining lease area as surface dump and backfilled in the exhausted portion of the pits. The total waste to be generated during the plan period is about 69.85 million tonnes. An area of 6.7146 Ha shall be utilized for Dumps and Material stocking at the conceptual stage of mining.

viii. Water requirement:

Total water requirement	664 KLD	Pit Water	628 KLD
		Ground water	36 KLD
Source	Water from Mine Pit will be used for dust suppression, Vehicle washing and Green belt. Water for domestic requirement will be met from bore well.		
Permission	The Bore wells are registered with Goa State Water Resource department. Application for using mine pit water will be submitted.		

ix. Nearest village / town/ highway/railway station / water bodies/monument:

Particulars	Particular's Name	Distance & Directions
Village	Lamgoa	Within the lease area
Town	Bicholim Town	0.5 km, East
Road	State Highway SH-1	0.65 km, East
Railway Station	Tivim Railwaystation	10.5 km, North
Water Bodies	Asnora River Mayem Lake Mandovi River	Touching lease boundary at one of the points 0.46 km 2.3 km, SW
School	Mulgao Govt. Primary School	Within the lease area
Worship places	Namuzgah/Idgah Shri Lairae Temple	Within the lease area 0.86 km
Caves/Fort	300m buffer from Lamgao caves Khorjuvem Fort: 2 km	

x. Presence of Environmentally Sensitive areas in the study area:

Forest Land/Protected Area/Environmental Sensitivity Zone	Yes/ No	Details of Certificate/letter/Remarks
Forest Land	Yes	Mayem Forest Common Boundary with the mine lease area The following Reserve Forests are located within 10 km radius of the mine lease area such as Kharapal RF -6.7 km Kasarpal RF - 5.1 km Ambadgaon RF - 7.6 km
National park	No	The Project Proponent has submitted the letter from the Office of the Dy. Conservator of Forests vide Lr No: DCF(WP)/Tech/Digi/Vol-I/75/2022-23/ 968 dated 23.01.2023 stating that the proposed Bicholim Mineral Block-I is not situated within 10 km radius from the boundary of any the protected area in the State of Goa. PP also submitted the authenticated map dated 24.01.2023 showing the distance of the following Wildlife Sanctuary from the mine lease area. i. Madei Wild life Sanctury-14.105 km, E ii. Salim Ali Bird Sanctuary -10.553 km, SW iii. Bondla Wild life Sanctuary -20.476 km, SE
Schedule-I species	Yes	The Project Proponent has submitted the letter from the Office of the Dy. Conservator of Forests vide Lr No: 5/FCA/GEN/F&F/DCFN/TECH/2022-23 dated 04.04.2023 with regard to list of Flora and Fauna species present in core and buffer zone.

		The following Schedule-I species are found in the study area such as 1 Common leopard (<i>Felidae</i>) 2 White-bellied Sea-Eagle(<i>Accipitridae</i>) 3 Indian Peafowl (<i>Phasianidae</i>) 4 Crimson rose- Butterfly (<i>Papilionidae</i>)
Status of Wildlife Conservation Plan	Yes	Wild Life Conservation Plan is prepared and submitted for approval of Chief Wildlife Warden (CWLW) on 19.06.2023. PP has submitted the copy of the acknowledgement from Chief Wildlife Warden.

xi. Green belt/plantation details:

Proposed area for green belt/plantation	105.8894 ha
Budget for green plant& plantation till the end of life of mine.	Rs159.0Lakhs
Particulars for Green belt/plantation	Area covered (in Ha)
7.5 m barrier & non-mineralized zone	25 ha
50 m safety zone of nallah, roads, electric lines	
Additional information (if any)	80.8894 ha (on backfilled area)

xii. Details of Baseline data:

Baseline Data (Air / Water / Noise / Soil / Ground water table/ others)			
Period of baseline data collection	March, 2023 to May, 2023		
Season (Summer / Pre-monsoon / Post-monsoon / Winter)	Summer Season		
Ambient Air Quality (no. of locations) and results	No. of Locations	Parameters	Results
	9	PM10	27.0 to 56.0 $\mu\text{g}/\text{m}^3$
		PM2.5	14.0 to 36.0 $\mu\text{g}/\text{m}^3$
		SO2	4.0 to 13.0 $\mu\text{g}/\text{m}^3$
NO2		<4.0 to 18.0 $\mu\text{g}/\text{m}^3$	
Noise level (no. of locations) and results	No. of Locations	Parameters	Results
	09	During Day Time [Leq dB(A)]	43.1 to 61.7
During Night Time [Leq dB(A)]		35.9 to 49.3	

Water Quality (no. of locations) and results	Surface water quality		
	No. of Locations	Parameters	Results
	07	pH	6.35 - 7.39
		TDS (mg/l)	72 - 11240
		Fluoride (mg/l)	<0.1
		Chloride (mg/l)	18 - 5620
		Fe (mg/l)	<0.05
		Dissolved Oxygen (as O ₂), mg/l	6.2 – 6.9
		Biochemical Oxygen Demand (as O ₂), mg/l	<3.0
		Chemical Oxygen Demand (COD) mg/l	22.0 – 26.0
Groundwater Quality			
No. of Locations	Parameters	Results	
10	pH	5.63 – 7.07	
	TDS (mg/l)	20 – 150	
	Fluoride (mg/l)	0.1	
	Chloride (mg/l)	5.0 - 19.0	
Soil Quality (no. of locations) and results	No. of Locations	Parameters	Results
	07	pH	5.38 to 5.78
		Electrical Conductivity (mohs/cm)	0.28 to 0.318
		Nitrogen (kg/ha)	200 to 275
		Phosphorus (kg/ha)	14.3 to 17.8
		Potassium (kg/ha)	230 to 263

xiii. Public Hearing (PH) Details:

Advertisement for PH with date	07.07.2023 Regional: Bhangar Bhui, Heraldo, Lokmat & Free press journal (Mumbai Edition) News papers
Date of PH	11/08/2023
Venue	Narayan Zantye Multipurpose Sports Complex, Sarvan, Bicholim, Goa
Chaired by	District Collector, North Goa
Main issues raised during PH	Pollution, impact on ponds, Support for Education, Health, Agriculture Development & Skill Development, Employment.
Budget proposed for addressing issues raised during PH	Rs 309.3 Lakhs

xiv. Rehabilitation & Resettlement:

R & R details	There is presence of habitation within ML Area at Mulgao and lamgao villages. Safety Buffer of 50m will be maintained from the habitations. No Rehabilitation & Resettlement Plan is proposed during life of mine.
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xv. Court case details:

Court Case	Yes
Additional information (if any)	<p>First Case:</p> <ol style="list-style-type: none"> 1. WP(Civil) 2478 of 2022 (Filing number) before the High Court of Bombay at Goa 2. The said writ petition has been filed against the State Government and seeks to challenge the identification of properties bearing survey no. 90/1(part) and 96/0 as part of the recently auctioned Bicholim mine. The petition alleges violation of Rule 5 &6 of Mineral Evidence Rules and Section 10B of MMDR, Act by the State of Goa and DMG. The petitioner has prayed for quashing of auction notice to the extend it includes the property of the petitioner and grant a writ of mandamus against the Respondents. 3. Case status is pending. 4. No adverse orders have been passed. 5. As per the last order the matter has been disposed of by the HC on 17th July 2023 with a direction to the Petitioner to make a representation before the Government and the Government is to dispose of the same within four months. <p>Second Case:</p> <ol style="list-style-type: none"> 1. WP 592 of 2022 The said writ petition seeks to challenge the constitutionality of the tender documents of Phase I auction of Goa mines. The petition alleges violation of Rule 5 & 6 of Mineral Evidence Rules by the State of Goa and DMG. The petition alleges non-disclosure of essential facts such as bore hole data, approved mining plan, production data of the previous five years and exploration data. The petitioner has prayed for quashing of auction notice to the extend it fails to

	<p>include the essential facts and in the alternative to stay the auction.</p> <ol style="list-style-type: none"> 2. Case status is pending 3. No adverse orders have been passed. 4. As per the last order the matter is listed on 01.09.2023.
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xvi. Affidavit/Undertaking details:

Affidavit as per Ministry's OM dated 30.05.2018	The Project Proponent has submitted the Affidavit in a non-judicial stamp paper of Rs 100 bearing no: A807037 dated 24.04.2023 stating that they will comply to the directions issued by MoEF&CC vide Office Memorandum F.No.3-50/2017.IA.III (Pt) dated 30th May, 2018 in terms of directions given Hon'ble Supreme Court in judgment dated 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of common cause versus Union of India & Ors.
Undertaking of Project Proponent	<p>The Project Proponent has submitted an undertaking stating that the Environmental Impact Assessment Report of Block-1 Bicholim Mineral Block of M/s Vedanta Ltd was prepared by M/s Mineral Engineering Services, QCI/NABET Accredited EIA Consultant at Sr.No. 55 as per list of list of accredited consultant/organizations.</p> <p>The Project Proponent has submitted an undertaking that the information and data provided in the EIA report and submitted to the Ministry are factually correct and they are fully accountable for the same.</p>
Consultant submitted an Undertaking vide letter dated 02.06.2023	This is to declare that the prescribed ToRs have been complied with and that the data submitted are factually correct in respect of EIA & EMP report prepared for Block-1 Bicholim Mineral Block of M/s Vedanta Ltd, Goa.

xvii. Details of the Environmental Management Plan (EMP):

Activities	Capital cost (Crores)	Recurring cost (Lakhs/annum)
Plantation	-	7.5
Environment monitoring	44	44
Air pollution control measures	20	300
Water Treatment	-	11
Erosion control /monsoon measures	-	221
Personal protective equipment	-	15
Maintenance of fire protection systems	-	1.5

Environment awareness & training	-	5
Health	8	16
Total	72	621

xviii. Details of project cost and employment:

Particulars	(Rs. In lakhs)
Project Cost	25000 Lakhs
Employment	716 no.s

