

EXECUTIVE SUMMARY

of

Block-I Bicholim Mineral Block

Area : 478.5206 Ha.

**Bicholim, Bordem, Lamgao, Mulgao, Mayem & Sirigao villages of
Bicholim Taluka, North Goa District, Goa State**

**PROPONENT
Vedanta Limited**

**Sesa Ghor, 20 EDC Complex, Patto, Panjim
Goa- 403001**

June-2023

**EIA Consultant
MINERAL ENGINEERING SERVICES**

25/XXV, Club Road, BALLARI-583103, Karnataka

email : mes_msraju@yahoo.co.uk

Tel: 08392-267421

1.0 INTRODUCTION

In pursuant to the notice inviting tender dated 30.09.2022 by the Government of Goa in accordance with Mines and Minerals (Development and Regulation) Act 1957, and the Mineral (Auction) Rules, 2015 and as amended from time to time, Vedanta Limited intends to obtain prior Environmental clearance from MoEF&CC for the production of 3.0 MPTA in Block-I Bicholim Mineral Block located in Bicholim, Bordem, Lamgao, Mulgao, Mayem & Sirigao villages of Bicholim Taluka, North Goa District, Goa State.

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.

1.1 PROJECT DESCRIPTION

The Block area of 478.5206 Ha falls under Block 1 - Bicholim Mineral Block in Bicholim, Bordem, Lamgao, Mulgao, Mayem & Sirigao villages of Bicholim Taluka, North Goa District, Goa State.

The proposed mineral block area is having about 84.743 million tonnes of mineral reserves & resources. The mined Iron Ore shall be utilized at the company-owned pig iron plant, other domestic and export markets.

The block area falls under the Toposheet No. 48 E/14, Survey of India and bounded by latitude of 15° 34' 20.518" N to 15° 36' 54.018" N & longitude of 73°54' 4.754" E to 73° 57' 09.51" E.

The general elevation of mineral block area varies from 169.14 m to -37.24 m above MSL. State Highway SH-1 is about 0.65 km from ML area, the nearest Railway

station is Thivim Railway station which is at a distance of 10.5 km by road, the nearest Air port is Mopa Airport at a distance of 27.3 km.

ENVIRONMENTAL SENSITIVITY

Land Details & Survey Nos	478.5206 Ha Sy.Nos : Bordem : Parts of Survey No. 19, 21, 23, 31, 32, 33, 34, 40, 41, 42, 43, 44 Bicholim : Survey No. 80, 81 & Parts of Survey No. 72, 77, 78, 79, 82, 83, 84, 86, 88, 89, 90, 95, 96 & 99 Lamgao : Survey No. 20, 24, 25, 26 & Parts of Survey No. 1, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 21, 22, 23, 27, 28, 29, 30 & 46 Maem : Survey No. 145, 164, 165 & Parts of Survey No. 84, 85, 86, 114, 142, 143, 144, 146, 162, 163, 166 & 167 Mulgao: Survey No. 34, 62, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 89, 91, 110, 114, 115, 116 & Parts of Survey No. 33, 35, 48, 61, 63, 79, 80, 81, 86, 88, 90, 92, 93, 94, 95, 96, 101, 102, 103, 104, 109, 111, 112, 113, 117, 118 & 124 Sirigao : Parts of Survey No. 70, 75, 76, 77, 78, 79, 80, 81 & 82	
Geographical Coordinates	Latitude 15° 34' 20.518" to 15° 36' 54.018" N & longitude of 73°54' 04.754" to 73° 57' 09.51" E.	
Survey of India (SOI) Topo-sheet No	48 E/14	
Reserves & Resources	84.743 million tonnes	
Production Capacity	3.0 Million Tonnes	
Life of the Mine	30 Years The mining lease will be valid for 50 years from the date of execution of the mining lease.	
Water requirement	664 KLD	
Power requirement	5.8 MW	
Sanctuary / Tiger Reserve/Elephant / any other Reserve Forest	None	
Biosphere Reserve	None	-
Water Bodies	Asnora river	Touching lease boundary at one point
	Bicholim River	0.23 Km
	Mandovi River	2.3 kms
	Chapora River	7.5 km
Defence Installation	None	--
Nearest airport	Mopa	27.3 Kms
Nearest Railway Station	Tivim	10.5 kms
Nearest Highway	SH-1	0.65 KM from ML area
Seismic Zone	II	--
Nearest Habitat	Within the lease	Min Buffer of 50mts shall

		be provided and no drilling and blasting shall be carried out.
Environmental Protection Cost	Capital Cost: Rs. 72 lakhs Recurring Cost: Rs. 448 Lakhs	--
Project Cost	25000 lakhs	
Man Power Requirement	716	Both Direct(521) & Indirect (195)employment
Archaeological monuments/ places of worships/public utilities etc.	Namuzgah/Idgah	Archaeological monuments Within ML area. (200m buffer will be maintained)
	Shri Lairae Temple	0.86 km from ML area .
	Amthane Dam	7 kms
	Saptakoteshwar temple and caves at Narve	2.5 kms, There are other monuments within 10km radius namely Churches at Old Goa, Site at Gujir,
	Fort at Khorjuvem	2 kms, there are few other forts also within study area like fort at Colvale & Sanquelim
Coastal Regulation Zone (CRZ)	--	--
Distance from the HFL of the river in m	Asnora river is touching one part of the lease boundary, but the elevation difference is min 10mts.	Asnora river is touching one part of the lease boundary but the elevation difference is min 10mts.
Nearest School	Mulgao Government Primary School	Within Lease (School is non functional since last few years)
	Lamgao Government Primary School	0.015 kms outside the mine lease
Mangrove	Assnora Creek Mangrove	210 mts from mineral block area

1.2 GRANT OF TOR & BASE LINE DATA MONITORING

The MOEF&CC accorded the TOR for the Project vide TOR identity TO23A0000GA5700309N dated 16/06/2023 The Baseline Data was collected during the period from March to May 2023.

2.0 MINING METHODOLOGY

The proposal of obtaining environment clearance for 3.0 Million tonnes per year

with overall overburden ratio of 1 : 8.39. Mining operations will be by way of mechanized opencast method without drilling & blasting, complying with all the statutory requirements using Heavy earth moving machineries like Rippers and Dozers, shovels, dumpers, wheel loaders, and tippers. Rippers and Dozers will be used for ripping of hard material and wheel loaders are used for loading and dozers for levelling. The Run of Mine (ROM) Iron Ore will be subjected to the dry crushing and screening in the crushing and screening plant of 4mtpa located inside the block area. Finished product (Lumps & Fines)/ROM will be utilized in the Pig Iron plant of the company other domestic and export markets. The ore transportation from mine to the jetty will be carried out by tippers with the capacity of 10.5 Tonnes. Most of the transportation will happen through company owned dedicated road, only 900 m. of public road will be used.

2.1 PRODUCTION, RESERVES AND LIFE OF MINE

The total reserves/resources as on 13.01.2023 are 84.743 Million Tonnes, which is considered for defining the Life of the Mine. The life of the mine will be 30 years which may enhance based on the future results of exploration planned during the Mining Plan period. However, the lease is valid till 50 years .

2.2 MANPOWER, WATER & POWER REQUIREMENT

MAN POWER : The Project shall provide direct employment to about 521 people, which includes mine officials, skilled, semi-skilled and unskilled labour and about 195 indirect employment opportunities to the locals . Over and above this a lot of employment will be generated in the form of contracts like transportation, plantation, workshops and garages, and allied activities

S.No	Designation	Nos
1	Mines Manager (1 st Class)	5
2	Mines Manager (2 nd Class)	8
3	Mining Engineer	21
4	Geologist	3
5	Mechanical Engineer	12
6	Electrical Engineer	8
7	Mining Foreman	20
8	Mine-mate	12
9	Skilled workers/operators	220
10	Semi Skilled	70
11	Unskilled	128
12	Other	14
	Total	521

WATER : The entire water requirement except that of domestic consumption will be met through Rain water harvested within the mine pits .Efforts will be put for reduction of specific water consumption year on year by adopting best practices .

Purpose	QTY (KLD)	Source
Dust Suppression	600	Rain water harvested in mine pit
Green Belt	20	
Vehicle Washing	8	
Domestic	36	Bore Well
Total	664	

POWER REQUIREMENT : The estimated overall power requirement including utilities and auxiliary facilities for the proposed mine are indicated below:

- Annual energy consumption : 5.8 MW

Source of Power : Electric power supply is available from State Grid.

Standby DG Set with capacity of 1000 KVa 1 no., 500 kva 1 no., 200 kva 3 nos

2.3 RESETTLEMENT & REHABILITATION

There is no proposal for Resettlement & Rehabilitation during the entire life of the mine.

3.0 DESCRIPTION OF THE ENVIRONMENT

The Block-I Bicholim Mineral Block is the core zone for the present EIA study. The area encompassing 10 km radius from the boundary of the core zone has been defined as the buffer zone. The core zone and the buffer zone together constitute the study area. The Baseline Environmental data with respect to Air, Water, Noise and Soil Quality in the study area for the present EIA study is considered for the Summer Season 2023. The various studies on hydrogeology, flora, fauna, and socioeconomic study were also conducted during the same period. Sampling and analysis has been carried out by M/s. Environmental Laboratory (Unit of Mineral Engineering Services), Bangalore, Laboratory accredited by NABL and recognized by CPCB/MoEF&CC.

Environmental component	Monitoring period	Number of Sampling Stations	Parameters
Micro-Metrology	Mar to May 2023	one	Temp, Relative humidity, Rainfall, Wind speed, wind direction
Air Quality	Mar to May 2023	9 Stations	PM ₁₀ , PM _{2.5} , SO ₂ , NO ₂ , CO, NH ₃ , C ₆ H ₆ , B(a)P, As, Lead O ₃ & Nickel
Water Quality	May 2023	7 Samples Surface water & 10 Samples Ground water	IS-10500:2012 & CPCB NORMS
Noise	April-2023	9 Stations	L _{day} , L _{night} , & L _{eq}
Soil	May-2023	7 Samples	Physical & Chemical parameters of Indian standards IS: 2720
Land use	May-2023	Core & Buffer Zone	--
Ecology & Biodiversity	January-April-2023	Core & Buffer Zone	Flora & Fauna Survey
Socio-Economic	April -2023	10Kms Study area	Need base Assessment Survey
Hydrogeology	Mar-2023	Core & Buffer Area	Bore well study

3.1 Topography

The topography is undulating low hill terrain extending all along the mining block in the North west and South East direction. Mine does not have any forest land within the lease. The area is located on the foot hills of Western Ghats belt and receives heavy rainfall during monsoon season, the average annual rainfall is about 3500mm.

The Block I- Bicholim Mineral Block is situated in North Goa district and extends between Lat 15° 34' 20.518" N to 15° 36' 54.018" N & longitude of 73°54' 4.754" E to 73° 57' 09.51" E. The mine block area is about 478.5206 ha. The Mine is located on a hill range running in a SE-NW direction. The general elevation of ML area varies from 169.14 m to -37.24 m above MSL .

The drainage pattern in the study area is dendritic and sub dendritic. Bicholim Mineral block study area fall under Mondovi River basin of Taluka Bicholim, Bardez, Satari, Sanguem, Tiswadi & Ponda. The catchment area of Mondovi River 1580 Sqkm. The Sahyadri hill ranges in the east form the main watershed. The streams originating here flow in west and north west direction to join the Arabian Sea. The study area drainage pattern is dendritic and sub dentric

3.2 Ambient Air Quality

For Ambient air quality 9 stations have been fixed covering all the directions, the frequency of monitoring is 2 days/ week for 3 months and the parameters covered were as per CPCB NAAQS guidelines.

The statistical analysis of Ambient Air Quality is as follows, the maximum values of

SO₂, NO₂, PM₁₀ & PM_{2.5} in the corezone station were found to be 13, 16, 53 & 36 µg/m³ and in the Buffer zone villages the maximum values were found to be 13,18,56 & 36 µg/m³.

All other parameters like CO, O₃, NH₃, Pb, As, Ni, Benzene (C₆H₆), & Benzo(a)Pyrene (BaP), are also sampled and results of analysis were found to be within the limits of NAAQ's.

3.3 Noise Levels

For noise quality 9 stations including one station in core zone and 8 in buffer zone villages were sampled and Leq during day & night are observed. The Leq value during day time in the core zone station were found to be 61.7 dB(A) and during night time the noise levels were found to be 49.3 dB(A). In the buffer zone villages the noise levels were found to be in the range of 43.1 to 61.2 dB(A) and during night time the noise levels were found to be in the range of 35.9 to 44.9 dB(A). The noise levels both in the corezone and buffer zone were found to be within the limits of Noise Quality Standards for Industrial, Commercial and Residential areas.

3.4 Water quality

Water Quality Monitoring was done by grab sampling once in a season for 7 surface Water and 10 Ground Water samples. IS: 3025, APHA, & IS:1622 standards are used for analysis. Thus, the analysis results are compared to IS standards IS:2296 & IS:10500:2012. The results of few surface water samples shows high TDS, Total hardness, Sulphates, and Chlorides. This is mainly because of the influence of creek water. The open well samples were found to have pH slightly acidic in nature. This is possibly due to the occurrence of lateritic ore.. Whereas other parameters are within permissible limits of respective standards.

3.5 Soil Quality

Soil Quality Monitoring at 7 locations including one from the Mine Block and others from nearby village agricultural fields are collected and analysed, during the study period for Physical Parameters and chemical parameters. They are all observed to be within normal soil quality fit for cultivation.

3.6 Land Environment

The existing major land use of study area covering 10 km radius are 6.61% of water bodies, 0.9% reserve forests, 2.12% of mangroves, 6.23% of agriculture land, 20.97% of scrub land and 15.41% of Settlement area.

Sl.no	Particulars	Area Ha	%
1	Forest Area	429.5	0.92
2	Mangroves	991.0	2.12
3	Water Bodies	3092.1	6.61
4	Open mixed forest/Cashew Plantation	21017.0	44.91
5	Flooded Vegetation	1328.0	2.84
6	Agricultural Land	2917.5	6.23
7	Settlements	7210.2	15.41
8	Scrub Land	9811.9	20.97
Total Area		46797	100.00

After the ore is exhausted in the pits the broken up land will be backfilled and will be progressively afforested and rehabilitated with local species like Cashew, mango, Jamun, Cocum, Terminalia etc. All the efforts will be taken for maximum survival and growth of the plants. Some of the areas will be developed as water bodies.

3.7 BIOLOGICAL ENVIRONMENT

The Mine area is located at the distance of around 10.553 km from the Salim Ali Bird Sanctuary, hence, there is very less chance of threat to the sanctuary and mangrove ecosystem, however, mine management could work with downstream riparian and mangrove forest and assist ecologically restoration as per the EMP suggested species.

The Mine pit area is already degraded and away from community settlement usage, hence there is not much additional impact or social ecological constraints.

In case of conservation of flora and fauna as per suggested EMP, greenbelt shall be developed all along the boundary , unused areas, inactive dump slopes and roadside of core and buffer areas . The proposed biodiversity management plan will be implemented through state forest department.

Budget allocations and time bound interventions will be monitored by local authority to ensure that the conservation of biodiversity and no damage occurs to the existing ecosystem habitats in the study area. The dominant species in the

reserved forest were *Anacardium occidentale*, and *Acacia auriculiformis*, which have been promoted significantly on both private and degraded government land. The Mango and Coconut orchards is significantly promoted to farmers on agricultural bunds and house backyards. There are no endangered or endemic species of flora or fauna in the core zone.

3.8 SOCIO-ECONOMIC ENVIRONMENT

There are 68 villages/towns - 56 villages and 12 census towns (CT), in the buffer zone. Of these, 68 villages/towns, 48 villages and 12 towns are located in 6 talukas of North Goa and 8 villages in one taluka in Maharashtra. As the data pertains to large number of villages and towns are in North Goa, the buffer zone is compared to North Goa District.

Usually, villagers grow coconuts, cashew or mango in the small piece of land. In the absence of mining activity agriculture and tourism are the only source for employment.

The infrastructure and amenities available in the study area denotes the economic well-being of the region. It is observed that good infrastructure facilities are available in the project study area, which consists of education, health care, drinking water facilities, communications, transportation, etc. Due to the proposed mining activity, no significant adverse changes are visualized in the traditional way of life of the people residing in the villages in the buffer zone. Further people residing in the nearby villages will be benefited by the direct and indirect employment opportunities created by the mining activities along with the various socio economic development activities taken by company. The communication, health and education facilities will improve and thus the mining activity will be beneficial and will have a positive impact in the region.

4.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The Block-I Bicholim Mineral Block is yet to start mining and shall operate taking all precautionary measures to reduce the impact of mining operations on Air, Water, Noise and Soil and ensuring all control measures to comply with the prescribed standards.

4.1 AIR ENVIRONMENT

The impacts on Air Environment is assessed through Aermod Modelling and results show that the cumulative impacts on the surrounding buffer zone villages after commencement of mining operations will be within the permissible limits

Following measures will be undertaken to control the Air pollution/dust generation during the mining activities:-

- ❖ Due to high inherent moisture of the ore as well as waste, generation of dust while loading will be minimal. Speed limit of transport vehicles will be enforced.
- ❖ Transportation trucks will be loaded to the prescribed capacity and covered with tarpaulin.
- ❖ Dust Sprinkling system with a fine mist spray will be used for dust suppression along the road as well as stacks.
- ❖ The dump slopes will be covered with geotextiles, which will prevent generation of dust. during the monsoon the finalized geotextile laid areas will be taken up for plantation.
- ❖ Plantation done on the slope of waste dump itself act as a wind breaker.
- ❖ Latest machinery having air conditioned cabin will be used for loading and dozing operations.
- ❖ Proper maintenance of transport machinery with regular PUC will be done.
- ❖ Providing acqoustic enclosure and proper exhaust chimney height to DG set
- ❖ Proper dust suppression measures at crushing and screening plant , dust generation areas will be covered at source.
- ❖ General aspects of air quality management will be included in induction training to be provided to all employees.
- ❖ Air monitoring will be carried out to keep a check on the air quality and to take corrective action if required.

4.2 WATER ENVIRONMENT

The rain water is harvested into mine pits will be used for various activities like dust suppression, vehicle washing, gardening etc . Though the ground water shall be encountered in the pit, there shall be no adverse impact due to pit dewatering as the radius of influence due to pit dewatering falls 10m from the periphery of the ML area. The protective measures in the form of use of geotextiles to cover dump slopes, garland drainages, trenches, settling tanks, laterite boulder walls application of coco

logs will be undertaken to control the water pollution.

Thus there shall be no adverse impacts on surface and ground waters. In fact the local villagers will be benefited by discharge of clean rain water harvested inside the pit.

The impact of Mining operations on the Assnora river and management

The detailed study was concluded on Assnora river which touches one end of the lease boundary the study concluded that the existing garland drains, settling pits and check dams are made properly in the Mineral Block area and shall be maintained for the proper flow of rainfall runoff generated during the year. The desiltation work will also be monitored and done before the monsoon season. The daily silt load calculated is found to be 53.82 mg/l.

The likelihood of seepage from Assnora River in the 5 bottom pit is studied very carefully and in detailed manner. Further no mining has to be done from the 5 bottom pit. The lithology of the beds nearby the river and pit is observed through borehole logs and cross-section which clearly depicts that the dip of the bedding plane and the impervious clay rich lithology prevents the seepage of water from the river into the 5 Bottom Pit. The depth of the river nearby pit is only 2.5 meter and underlain by 15 m impervious thick clay rich lithology, so there is no seepage of Assnora River water inside the 5 Bottom Mine Pit.

The impact of Mining operations on Hydrogeology

Hydrogeological studies were conducted to know the impact of mining activities on Ground water table. The study concluded that the core and buffer area of the Mining Lease is declared as SAFE in respect of ground water development and management. [SEP]The groundwater extraction in the Mining Lease is negligible and hence there is no adverse impact created due to mining & allied activities in the surrounding 10 Km radius of buffer area [SEP]

4.3 NOISE ENVIRONMENT

Maximum noise is produced from operation of earth moving machineries &

movement of dumpers .No drilling and blasting operations are involved. Wide green belt shall be provided surrounding ML to attenuate noise pollution. Regular maintenance of mining equipment, machinery & all vehicles as per the manufactures recommendations to minimize the Noise generation shall be followed.

Following management measures will be adopted to control noise levels:

1. Provision of acoustic cabins for operators deployed on HEMM
2. Selection of new low-noise equipment from the manufactures failing which use of additional retrofits if available.
3. Green belt developed all around the mine and haulage roads acts as an acoustic barrier

4.4 IMPACT ON LAND ENVIRONMENT

At the conceptual stage around 105 ha of land will be brought under plantation by planting mix of fruit bearing trees like Cashew, Jack fruit and forestry species. Around 20 Ha of the area will be reclaimed by forming a water reservoir . This water reservoir will serve in augmenting the ground water condition of the region and also the pit discharge water will be supplied to local villagers for agricultural purpose.

The BEES methodology was employed to evaluate the impact on Environmental Pollution Parameter and the Impact score obtained was -8.

4.5 IMPACT ON BIOLOGICAL ENVIRONMENT

As there exists schedule I species falling within 10 km radius of the ML, a full-fledged biodiversity assessment study was taken up by the proponent along with wildlife conservation plan with financial outlay to assist the local forest department. The proponent shall take mitigation steps within ML area for immigration of wildlife through massive afforestation. The BEES methodology was employed to evaluate the impact and the impact score obtained was +6. This positive score is due to the massive afforestation the project proponent has proposed to be taken up on the already stripped area.

4.6 IMPACT ON SOCIO ECONOMIC ENVIRONMENT

This mine shall provide direct employment to about 521 people, which includes mine officials, skilled, semi-skilled and unskilled labour and about 195 indirect employment opportunities to locals Over and above this a lot of employment

will be generated in the form of contracts like transportation, plantation, workshops and garages, and allied activities

The mining activities help in sustainable development of this area including further development of physical & social infrastructural facilities. The mining activity provides revenue to the state and centre in form of taxes and royalty etc.

The project proponent shall assess the health conditions of the workers as per the DGMS guidelines. Noise, air, water quality will be maintained well within the limits. The BEES methodology was employed to evaluate the impact and the score obtained was +45.

The overall impact score obtained from BEES methodology is +42 which shows the project shall be beneficial to the local community and the local Government.

5.0 ADDITIONAL STUDIES

In additional studies, Risk Analysis followed by Disaster Management Plan, which will help in identifying the possible risks and to promote towards preparedness to counter any mishap. Risk analysis and disaster management plan have been prepared and incorporated in EIA Report.

6.0 ENVIRONMENT MANAGEMENT PLAN

A Comprehensive Environment Management Plan including development of Green Belt has been suggested. Identification of all potential environmental impacts of a project is an essential step of Environmental impact Assessment. These are critically examined and major impacts are further studied. In case of mining projects, change in topography and land use, air pollution, water pollution, waste management, biodiversity and socio-infrastructure issues are significant. The Mine will be operated taking all precautionary measures to reduce the impact of mining operations on Air, Water, Noise and Soil and ensuring all control measures to comply with the prescribed standards. The impact of change of land use will be positive only, as portion of abandoned pit is partly backfilled and afforested and balance portion is left as water reservoir beneficial to local villagers. Development of green belt along the boundary of ML area will ensure a better environment. The budgetary cost towards EMP proposed is Rs 448 Lakhs per annum

CORPORATE SOCIAL RESPONSIBILITY

The Lessee proposes to undertake a number of activities under the Corporate Social

Responsibility Initiative during the operation of Mining Project. The capital CSR Budget has been worked out as per the expressed felt needs of villagers during Rapid Rural Appraisal. The proposed budget is to the extent Rs. 128 Lakhs / year and will be spent in surrounding villages.

Sr. No.	Thematic area	1st year	2nd year	3rd year	4th year	5th year
1	Agri & Animal Husbandry	1,000,000	1,200,000	1,500,000	1,500,000	1,700,000
2	Health Care	1,000,000	1,200,000	1,500,000	1,500,000	2,000,000
3	Education	4,850,000	4,200,000	4,200,000	4,400,000	4,300,000
4	Community Asset	700,000	900,000	1,000,000	1,200,000	1,500,000
5	Drinking water & sanitation	600,000	700,000	700,000	700,000	700,000
6	Skilling	500,000	750,000	750,000	800,000	800,000
7	Cultural	100,000	100,000	200,000	200,000	200,000
8	Sports	100,000	100,000	200,000	200,000	300,000
9	Women Empowerment	800,000	1,000,000	1,000,000	1,200,000	1,200,000
10	Environment - Community plantation	100,000	100,000	100,000	100,000	100,000
	Total	9,750,000	10,250,000	11,150,000	11,800,000	12,800,000

CORPORATE ENVIRONMENT RESPONSIBILITY

In addition to the CSR, the Lessee proposes to undertake a number of activities as one time measure under the Corporate Environment Responsibility Initiative during the operation of Mining Project. Necessary budgetary provisions will be made after obtaining the response from locals during the Public Hearing for implementing the CER Activities in line with the MoEF&CC OM dated 30th September 2020 and 20th October 2020.

7.0 ENVIRONMENTAL MONITORING PROGRAM

Environmental monitoring is required to know the Quality of Ambient Air, Water and Noise Levels during the operation phase of the proposed project and take required corrective measures, in case of any non-compliance with the norms stipulated by regulatory authorities. The methodologies adopted for environmental monitoring will be in accordance with the CPCB, SPCB and Indian Bureau of Mines requirement.

Proposed Monitoring Schedule for Environmental Parameters

S.No.	Particulars	Frequency of Monitoring	Sampling	Parameters Required to be Monitored
Air Quality				

S.No.	Particulars	Frequency of Monitoring	Sampling	Parameters Required to be Monitored
1	Ambient Air quality in and around the Mine	Twice a week	24 hours continuously	PM _{2.5} , PM ₁₀ , SO ₂ & NO ₂
Water Quality				
2	Water Quality around the Mine (Surface & Ground Water)	Once in a Month	Grab Sampling	As per IS: 10500
Noise Level Monitoring				
3	Ambient Noise levels & work place Noise monitoring	Once in a Quarter	Continuous for 24 hours with 1-hour interval	Noise Level
Soil Quality				
4	Soil Quality around the Mine	Once in a year	Grab Sampling	IS: 2720

8.0 EXPLANATION ON HOW ADVERSE EFFECTS ARE MITIGATED

The EIA/EMP Report has established the Base Line Environment of the Project Area and has assessed anticipated impacts of the Project on the overall ecology & environment. Accordingly, general as well as specific mitigation measures for management of the Key Environmental Parameters have been suggested. Further, specific measures towards monitoring and implementation of the Environment Management Plan along with details of the funds required towards implementation of the Pollution Control Measures are also included in the Report. By implementing the suggested Environment Management Plan adverse effects of the Project can be mitigated.

9.0 CONCLUSION

The Block- I Bicholim Mine Block is newly auctioned mineral block. The overall Impacts predicted were found to be on the positive scale. The EMP proposed will have a positive impact on the surrounding environment and the landscape of the area. The local population will be benefitted from this project by way of employment and CSR activities carried out by the company.