

EXECUTIVE SUMMARY (ENGLISH)

FOR OBTAINING ENVIRONMENTAL CLEARANCE

(Category - B1, under item 1 (a), as per EIA Notification 14th September' 2006 and its subsequent amendments till date)

FOR

“TEMSUWAI LIMESTONE MINE”

**Location: - At Temsuwai Wahlong village, Elaka Wahlong Sirdarship,
District– East Khasi Hills (Meghalaya)**

Production Capacity: - 9,750 TPA of ROM (Limestone: - 8,775 TPA; Waste: - 9,75 TPA).

Area: - 0.31 Ha; LOI issued on dated 25.03.2021

Lease Validity: -10 Years (From the date of Registration)

Details of ToR	:	Issued from SEIAA, Meghalaya
Baseline data Generation	:	December' 2021 to February, 2021 (Winter Season)
Project Cost	:	Rs. 11.00 Lacs

PROMOTER

**Shri Boris Khyllap
Mawlong Village, Mawlong Syiemship,
District – East Khasi Hills, Meghalaya**

ENVIRONMENTAL CONSULTANT

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NABET Accreditation: NABET/EIA/2023/ RA0192

September, 2021

Project:- Temsuwai Limestone Mine	
Applicant:- Shri Boris Khylllep	

EXECUTIVE SUMMARY

1.0 INTRODUCTION

The proposed project “Temsuwai Limestone Mine” is situated at Temsuwai Wahlong village, Elaka Wahlong Sirdarship, District– East Khasi Hills (Meghalaya). The total lease area of the project is 0.31 Ha. The mining activity will be carried out by open cast semi-mechanized method.

The Letter of Intent has been sanctioned in favour of Boris Khylllep from the Office of Govt. of Meghalaya, The Department of Forests and Environment, Office of the Divisional Forest Officer: East Khasi Hills & RI – BHOI (T) Division, Shillong vide letter no. KH/ 8/ ML/ Limestone/ 68/ 6109 dated 25.03.2021 which was valid upto 25.09.2020. The application for renewal of letter of intent has been submitted vide letter dated 10.09.2021. The proposed mine is spread over an area of 0.31 ha. with mineable reserves of about 60,000 Tonnes to produce 9,750 TPA of Limestone (ROM - 8,775 TPA) and 9,75 TPA of waste.

1.1 LOCATION OF LEASE AREA

The proposed project “Temsuwai Limestone Mine” is situated at Temsuwai Wahlong village, Elaka Wahlong Sirdarship, District– East Khasi Hills (Meghalaya).

1.2 DETAIL OF MINING LEASE

S. No.	Particulars	Details
1.	Name of Project	Temsuwai Limestone Mine
2.	Location	Temsuwai Wahlong village, Elaka Wahlong Sirdarship, District– East Khasi Hills (Meghalaya)
3.	Lease Area	0.31Ha.
4.	Land Type	Khatedari Land (Private)
5.	Latitude & Longitude	25°11’5.74”N to 25°11’4.17” N and 91°42’ 17.16” E to 91°42’ 16.24”E
6.	Seismic Zone	Zone – V



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1.3 PROJECT DESCRIPTION

The Letter of Intent has been sanctioned in favour of Sh. Boris Khylllep vide letter no. KH/ 8/ ML/ limestone/ 68/ 6109 dated 25.03.2021 which was valid upto 25.09.2020. The application for renewal of letter of intent has been submitted vide letter dated 10.09.2021. The proposed mine is spread over an area of 0.31 ha. with mineable reserves of about 60,000 Tonnes to produce 9,750 TPA of ROM (Limestone: - 8,775 TPA; Waste: - 9,75 TPA). The proposed mining operations will be carried out by open cast semi - mechanized method.

1.4 GEOLOGY

1.4.1 LOCAL GEOLOGY

The limestone is exposed in the whole lease area. No other rocks exposed in the lease area. The lime stone has strike almost north- south and dip seems vertical in absence of workings. No fault, fold and geological disturbances are observed in the area. The succession of rocks in the lease area is as given below:-

Table 1.1: Local Geology

Geological Age	Group Name	Formation Name	Rock Type
Recent	Newer Alluvium	Unclassified	Sand, Silt and Clay
-----UNCONFIRMITY-----			
Eocene	Jaintia Group	Shella Formation	Lime Stone

1.4.2 PHYSIOGRAPHY

The topography of the lease area is undulated. Highest elevation is 131 MRL and lowest is 80 MRL. The drainage of the lease area is SE to NW.

1.4.3 GEOLOGICAL AND MINEABLE RESERVES

Geological Reserve : 3,89,360 MT
Mineable Reserve : 60,000 MT
Production : 9,750 TPA of ROM
Life of Mine : 7.0 Years

1.4.4 MINING



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The mining will be done by open cast semi-mechanized method of mining. The salient features of mode of working as per approved Mining Plan with PMCP are:-

- The mining will be carried out by open – cast semi-mechanized method.
- The bench height will be kept 6m and width of the bench will not be less than the height of the bench.
- Total six bench will be developed i.e. from Bench levels 127mRL (top bench), 121mRL, 115mRL, 109mRL and 103mRL and 97mRL (lowest bench).
- Blasting will be done by short or long holes with the permission of DGMS.
- The bench slope will be providing 85°.
- The loading will be from pits or from stocks.

1.4.5 PRODUCTION DETAILS

The year wise development of mines for five year will progress as per the table below:-

Table 1.2: Production Details

Year	ROM (T)	Waste / sub-grade (T)	Limestone Dimensional (T)
1 st Year	9,750	9,75	8,775
2 nd Year	9,750	9,75	8,775
3 rd Year	9,750	9,75	8,775
4 th Year	9,750	9,75	8,775
5 th Year	9,750	9,75	8,775
Total	48,750	4,875	43,875

1.4.6 LAND USE PATTERN

Land use plan of the mine lease area to encompass pre-operational, operational and post-operational phases is given below:-

Table 1.3: Land Use Pattern

S. No.	Land Use Category	Pre-Operational (Ha.)	Operational (Ha.)	Post-Operational (Ha.)
1	Top Soil Dump	00	0.01	00
2	Overburden Dump	00	0.02	0.02 (Reclaimed by Plantation)
3	Excavation (Voids Only)	00	0.21	00
4	Road	00	0.01	00
5	Built Up Area	00	0.01	0.01 (Public use)



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6	Township Area	00	00	00
7	Afforestation	00	0.03	0.06
8	Reclamation (Backfilled)	00	00	0.21 (Rehabilitated by Plantation)
9	Mineral Storage	00	0.01	00
10	Sub – grade stack yard	00	00	00
11	Undisturbed Area	0.31	0.01	0.01
Total		0.31	0.31	0.31

1.5 DESCRIPTION OF THE ENVIRONMENT

For monitoring the environmental parameters like meteorology, air, water, soil and noise quality, the monitoring stations have been established at eight locations in the study area. The baseline data has been collected in the winter season (December' 2019 to February' 2021). The detail of the sampling locations is given in below:-

Table 1.4: Sampling Location

Sampling Location	Distance (Km)	Direction	Components
Shri Boris Khyllep (Mine Site)	--	--	Air, Water, Noise, Soil
Laityra	5.8	NE	Air, Water, Noise, Soil
Tharia	5.0	ENE	Air, Water, Noise, Soil
Bholaganj Bazar	3.2	E	Air, Water, Noise, Soil
Nayabasti	4.0	SE	Air, Water, Noise, Soil
Dalia	8.0	WSW	Air, Water, Noise, Soil
Laitkynsew	7.0	NW	Air, Water, Noise, Soil
Shri Challenge Rajee	2.15	ESE	Air, Water, Noise, Soil

1.5.1 LAND ENVIRONMENT

1.5.1.1 Land Use

The land use pattern of the study area based on the LISS – III data is as given below:-

Table 1.5: LULC

S. No.	Classification	Area (Ha.)	Area (Sq. Km)	%
1.	Irrigated Crop Land	5445.25	54.4525	17.25
2.	Barren Rocky/Stony Areas	10487.57	104.8757	33.23
3.	Built-up Land (Urban & Rural)	2834.18	28.3418	8.98



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4.	Dense Forest & Tree Cover	11901.48	119.0148	37.71
5.	River/ Lake/ Reservoir	894.16	8.9416	2.83
Total		31562.64	315.6264	100

1.5.1.2 Soil Quality

Soil samples were collected at eight representative sampling locations. The soil analysis results are given below:-

pH	:	7.62 – 8.03
Total Organic Matter	:	1.39 – 1.62 (% by mass)
Nitrogen as N	:	28.5 – 34.7 (mg/100gm)
Phosphorus as P	:	0.80 – 0.84 (meq/100gm)
Potassium as K	:	0.70 – 0.73 (mg/kg)

1.5.1.3 Water Environment

Eight ground water samples have been considered in the study area. The analysis results are presented below:-

Table 1.6: Water Quality Status



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S. No.	Parameter	Requirement (Desirable Limits).	Permissible Limits in the Absence of Alternate Source.	Units	Shree Challenge Rajee	Laittyra	Tharia	Bholaganj Bazar	Nayabasti	Dalia	Laitkynsew	Shri Boris Khylllep
Organoleptic & Physical Parameters												
1.	Colour	5	15	Hazen	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2.	Odour	Agreeable	Agreeable	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3.	Taste	Agreeable	-	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4.	Turbidity	1	5	NTU	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
5.	pH value	6.5-8.5	-	-	7.60	7.81	7.61	7.82	7.86	7.71	7.68	7.80
6.	Total Dissolve Solid (TDS)	500	2000	mg/l	131	140	138	129	137	132	135	136
7.	Aluminum (as Al)	0.03	0.2	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
8.	Total Ammonia	0.5	No Relaxation	mg/l	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
9.	Anionic surface Detergents(as MBAS)	0.2	1.0	mg/l	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
10.	Barium (as Ba)	0.7	No Relaxation	mg/l	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
11.	Boron (as B)	0.5	1.0	mg/l	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
12.	Calcium (as Ca)	75	200	mg/l	25.42	24.98	25.48	25.62	26.10	25.18	26.08	25.36
13.	Chloramines (as	4.0	No	mg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0



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	Cl ₂)		Relaxation									
14.	Chloride (as Cl)	250	1000	mg/l	4.85	4.91	4.77	4.95	4.99	4.85	4.92	4.79
15.	Copper (as Cu)	0.05	1.5	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
16.	Fluoride (as F)	1.0	1.5	mg/l	0.32	0.34	0.30	0.30	0.29	0.33	0.30	0.34
17.	Free Residual Chlorine	0.2	1.0	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
18.	Iron (as Fe)	1.0	No Relaxation	mg/l	0.06	0.07	0.05	0.07	0.03	0.04	0.05	0.06
19.	Magnesium (as Mg)	30	100	mg/l	8.42	8.62	8.73	8.40	8.51	8.56	8.56	8.58
20.	Manganese (as Mn)	0.1	0.3	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
21.	Mineral Oil	0.5	No Relaxation	mg/l	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
22.	Nitrate (as NO ₃)	45	No Relaxation	mg/l	0.38	0.41	0.41	0.31	0.39	0.41	0.38	0.40
23.	Selenium (as Se)	0.01	No Relaxation	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24.	Silver (as Ag)	0.1	No Relaxation	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
25.	Sulphate (as SO ₄)	200	400	mg/l	7.78	7.96	7.82	7.79	7.67	7.81	7.64	7.83
26.	Sulphide(as H ₂ S)	0.05	No Relaxation	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
27.	Alkalinity (as Ca CO ₃)	200	600	mg/l	88	91	86	92	86	91	84	96



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28.	Total Hardness (as CaCO ₃)	200	600	mg/l	97	105	102	105	97	108	99	112
29.	Zinc (as Zn)	5.0	15	mg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Parameters Concerning Toxic Substances:

1.	Cadmium (as Cd)	0.003	No Relaxation	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
2.	Cyanide (as CN)	0.05	No Relaxation	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
3.	Lead (as Pb)	0.01	No Relaxation	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4.	Mercury (as Hg)	0.001	No Relaxation	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
5.	Molybdenum (Mo)	0.07	No Relaxation	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
6.	Nickel (as Ni)	0.02	No Relaxation	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
7.	Polynuclear Aromatic	0.0001	No Relaxation	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
8.	Poly chlorinatedbiphenyl	0.0005	No Relaxation	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
9.	Arsenic (as As)	0.01	No Relaxation	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
10.	Total Chromium (as Cr)	0.05	No Relaxation	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05



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1.5.2 AIR ENVIRONMENT

To assess the baseline status of the air quality in the study area systematic ambient air quality monitoring has been carried out for criteria pollutants (PM₁₀, PM_{2.5}, NO_x, SO₂ and CO) at eight representative ambient air quality monitoring stations.

1.5.2.1 Air Quality

Ambient air quality monitoring has been carried out with a frequency of two days a week at eight locations covering one complete season i.e. December' 2019 to February' 2021. The summary of these results for all the locations is given below. These are compared with the standards prescribed by Central Pollution Control Board (CPCB) for rural and residential zone.

Table 1.7: Ambient Air Quality Status

S. No.	Sampling Location		Parameters				
			PM ₁₀ ($\mu\text{g}/\text{m}^3$)	PM _{2.5} ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO _x ($\mu\text{g}/\text{m}^3$)	CO mg/m ³
1.	Shree Challenge Rajee	Min	38.5	11.5	3.93	5.25	0.47
		Max	46.7	20.92	6.18	8.29	0.59
		Avg.	42.52	15.88	5.25	6.80	0.53
		98 th % ile	46.26	20.54	6.11	8.26	0.59
2.	Laittyra	Min	34.25	15.43	5.37	6.55	0.32
		Max	49.39	22.43	7.67	8.69	0.92
		Avg.	42.20	17.76	6.10	7.45	0.57
		98 th % ile	48.99	22.06	7.64	8.64	0.90
3.	Tharia	Min	32.58	13.79	4.8	6.14	0.45
		Max	49.5	22.4	6.5	8.86	0.55
		Avg.	40.69	17.29	5.63	7.45	0.51
		98 th % ile	48.13	22.37	6.41	8.69	0.55
4.	Bholaganj Bazar-	Min	36.02	14.78	4.33	7.09	0.46
		Max	55.3	24.2	8.44	12.64	0.79
		Avg.	47.25	20.29	7.22	9.58	0.62
		98 th % ile	53.83	24.05	8.43	12.64	0.78
5.	Nayabasti	Min	46.3	22.61	4.24	8.43	0.47
		Max	58.7	27.54	8.14	10.46	0.82
		Avg.	50.09	24.44	6.00	9.43	0.58



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		98th% ile	56.13	27.17	7.72	10.46	0.81
6.	Dalia	Min	35.41	14.32	5.35	8.54	0.47
		Max	45.02	21.38	7.89	10.98	0.85
		Avg.	40.98	16.62	6.89	9.95	0.62
		98th% ile	44.61	21.22	7.89	10.98	0.82
7.	Laitkynsew	Min	40.92	16.72	5.03	8.84	0.48
		Max	53.4	23.84	7.54	10.9	0.92
		Avg.	44.97	18.79	6.18	9.80	0.70
		98th% ile	51.48	23.38	7.51	10.89	0.89
8.	Shri Boris Khyllep	Min	40.02	20.96	5.78	8.6	0.25
		Max	52.97	32.97	8.2	13.2	0.48
		Avg.	48.08	27.97	6.88	10.41	0.37
		98th% ile	52.94	32.09	8.19	12.89	0.48
NAAQ STANDARDS			100	60	80	80	02

1.5.3 NOISE ENVIRONMENT

The noise monitoring has been conducted for determination of noise levels at eight locations in the study area. The noise levels at each location were recorded for 24 hrs. The results obtained were compared with the national standards and were found to be within the standards. The collected data are:-

Table 1.8: Ambient Noise Level Status

Location	Date of Sampling	Day Time (6.0 AM to10.0PM)	Night Time (10.0 PM to 6.0AM)
Shree Challenge Rajee	04/12/2020to 06/12/2020	58.2	43.6
Laityra	20/12/2020to 21/12/2020	49.1	35.4
Tharia	04/12/2020to 06/12/2020	42.1	36.8
Bholaganj Bazar	20/12/2020to 21/12/2021	49.3	37.9
NayaBasti	04/12/2020to 06/12/2020	47.2	33.4
Dalia	20/12/2020to 21/12/2020	50.8	37.1
Laitkynsew	04/12/2020to 06/12/2020	48.3	34.9
Shri Boris Khyllep	20/12/2020to 21/12/2021	51.2	36.7
Standards			
Category of Area/ Zone		Day Time	Night Time
Industrial Area		75	70



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Commercial Area	65	55
Residential Area	55	45
Silence Zone	50	40

1.5.4 SOCIO-ECONOMIC ENVIRONMENT

The study area includes the 82 Villages at Temsuwai Wahlong Village, Elaka Wahlong Sirdarship, District– East Khasi Hills (Meghalaya) within 10km area from mine periphery.

Table 1.9: Demography Profile of the Study Area

S. No.	Particulars	Details
1.	No. of Villages	82
2.	Total Population	30,024
	a. Male	15,369
	b. Female	14,655
3.	No. of Households	5,906
4.	No. of Literates	16,981
	a. Male	9,014
	b. Female	7,967
5.	Main Workers	9,004
	a. Male	6,613
	b. Female	2,391
6.	Marginal Workers	2,290
	a. Male	1,104
	b. Female	1,186
7.	Non-workers	18,730
	a. Male	7,652
	b. Female	11,078

(Source: Census, 2011)



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1.5.5 BIOLOGICAL ENVIRONMENT

Core Zone	Buffer Zone
Flora	
Grass - 3 Species	Grass - 10 Species
Climber – 6 Specie	Climber – 19 Specie
Herb – 7 Species	Herb – 40 Species
Shrubs - 8 Species	Shrubs - 70 Species
Tree - 9 Species	Tree - 74Species
Fauna	
Amphibian - 6 Species	Amphibian – 17 Species
Reptiles - 4 Species	Reptiles - 16 Species
Avifauna - 31 Species	Avifauna – 93 Species
Butterflies – 4 Species	Butterflies – 28 Species
Mammals – 2 Species	Mammals – 28 Species

1.6 RISK ASSESSMENT & MANAGEMENT

Risk analysis is the systematic study of uncertainties and risks encountered in various areas. Risk analysts seek to identify the risks involved in mining operations, to understand how and when they arise, and estimate the impact (financial or otherwise) of adverse outcomes. It also defines and analyzes the dangers to individuals, businesses and government agencies posed by potential natural and human-caused adverse events.

However, there are various factors, which can create unsafe working conditions/ hazards in mining of Limestone (major minerals). The following types of hazards are identified during the limestone mining operations:-

1. Accident during mineral loading, transportation and dumping
2. Accident due to vehicular movement
3. Inundation/ Flooding

Following procedure will be followed for effective management of any disaster in the mine.

Step 1: Identification of Disaster risk.

Step 2: Identification of persons at risk

Step 3: Removal of Hazard

Step 4: Evaluation of the risk

Step 5: Control measures to be taken



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Step 6: Maintain Assessment records

Step 7: Review

1.7 ENVIRONMENTAL MANAGEMENT PLAN

The summary of anticipated adverse environmental impacts due to the existing mine and mitigation measures are given below:-

Impact	Mitigation Measures
Land Environment	
Land will be degraded due to mining and dumping of waste	➤ At conceptual stage only 0.21 ha. area will be excavated which will be reclaimed at the end of lease period.
Water Environment	
Discharge of effluents water from the mine. Intersection of ground water table during mining operations.	There will be no discharge of effluent from the mine. As per the approved Mining Plan along with PMCP, ultimate pit level (85 MRL) will be above the ground water table and hence it will not be intersected.
Air Environment	
➤ Dust will be generated mainly during excavation, loading & unloading activities. ➤ Gaseous pollutants will be generated mostly by the traffic.	➤ It will be ensured that all the vehicles plying in the working zone are properly tuned and maintained to keep emissions within the permissible limits. ➤ At loading & unloading points and transportation routes, arrangement for water sprinkling will be made to minimize dust generation. ➤ In order to predict changes in the air quality, AERMOD version 8.8.0 model was used. The maximum incremental ground level concentrations of particulate matter PM ₁₀ & PM _{2.5} , and gaseous pollutants NO _x & CO from the different mining activities for the study period (winter) were observed to be 0.80 µg/m ³ , 0.24 µg/m ³ , 4.94 µg/m ³ and 4.98 mg/m ³ respectively. ➤ The resultant will remain within the National Ambient Air Quality Standards for industrial/ residential areas.
Noise Environment	
➤ Noise due to mining activities. ➤ Noise due to vehicular movement.	➤ The noise levels from all these sources are periodical and restricted to particular operation. ➤ The noise measurement data indicated that present noise levels in the study area is within the permissible limits of National Ambient Noise Quality Standards. ➤ Thus, due to natural attenuation effects by proper green belt/ maintenance of



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machines etc., the impact of noise levels will be minimal.

Socio-Economic Environment

- | | |
|---|--|
| <ul style="list-style-type: none">➤ Employment generation➤ Health impacts➤ Education Facilities | <ul style="list-style-type: none">➤ The mining activity puts negligible change in the socio economic profile.➤ No displacement (0) is proposed due to proposed mine.➤ Approx. 09 local workers will get employment opportunities along with periodical training to generate local skills.➤ New patterns of indirect employment/ income will generate.➤ Regular health Check up camp.➤ Assistance to schools and scholarship to children will be provided. |
|---|--|

Biological Environment

- | | |
|---|---|
| <ul style="list-style-type: none">➤ Impact on biodiversity➤ Impact on threatened species | <ul style="list-style-type: none">➤ The mining activity will have insignificant effect on the existing flora and fauna. The purpose of the project itself is to save the flora around the project area.➤ The existing vegetation within the mining area includes trees and shrubs vegetation. They will not be disturbed due to the mining activity. So, the impact on the vegetation is very less.➤ The growth of vegetation in and around the complexes. Noise and vibrations due to blasting and operation of the machines drive away the wild animals and birds from the nearby nests.➤ The cluster area and its buffer zone are devoid of any eco sensitive area. So the impact on the biodiversity and wild life is minimal.➤ Green belt will be developed along the individual lease boundary which will act as a pollution barrier for the biological environment.➤ There is the proposal for plantation along the haul road of individual lease and also along the connecting road.➤ The blasting, drilling and transportation will be carried out during the day time only minimizing the impact on the wild fauna movement.➤ All the necessary pollution control measures will be undertaken by the lessee to minimize the impact on the surrounding environment. |
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1.8 ENVIRONMENTAL ACTION PROGRAMME

The breakup of the proposed cost for Environment Management Programme is given as under:-

Table 1.10: Provision for Environmental Protection Measures

S. No.	Description	Capital Cost (Rs. In Lacs)	Recurring Cost (Rs. In Lacs)
1.	Environmental Monitoring (Air, Water, Noise and Soil)	--	0.20
2.	Occupational Health and Safety (Initial & Periodical Medical Check-ups)	0.50	0.50
3.	Green Belt (phase wise greenbelt development during life of mine i.e. 7 Years)	1.00	0.20
4.	Construction & Maintenance of Settling Tank, Garland Drains etc.	0.50	0.05
5.	Provision of fencing around mine pit	0.50	--
6.	Environmental Awareness Program	--	0.30
Total		2.50	1.25

1.9 CONCLUSION

EIA study was performed as per the approved ToR. Various environmental attributes were studied relating with aspects of mining activities. The related impacts were identified and evaluated. Considering all the possible ways to mitigate the environmental concerns Environmental Management Plan was prepared and accordingly fund was allocated. The EMP has been dynamic, flexible and subject to periodic review.

The project will increase the revenue of the State Govt. as well as it will help in the social upliftment of the local people. The greenbelt development programme will help in increasing the green cover in the nearby areas. Thus, the existing project is not likely to affect the environment or adjacent ecosystem adversely. The Senior Management will be responsible for the project review of EMP and its implementation to ensure that the EMP remains effective and appropriate. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP and the project will bring the positive impact in the study area.

