Online proposal no SIA/CG/MIN/465902/2024

Executive Summary of Draft Environmental Impact Assessment/ Environmental Management Plan

For

Public Hearing

Of

Proposed Sapnadar (Block A, B & C) Bauxite Block

Over an area of 171.136 Ha; Maximum production of Bauxite ROM (1,27,800 TPA)

At Village- Sapnadar and Rupakhar, Tehsil- Mainpat, District- Surguja, State- Chhattisgarh

Applicable schedule: Category B [1 (a) (As per EIA notification 14.09.2006)

Submitted By

M/s Maa Kudargarhi Steels Pvt Ltd

Proponent- Sunil Kumar Agarwal

Corporate Office: - Currency Tower, 5th Floor, VIP Road, Near Telibandha Chowk, Beside Ram Mandir, Raipur-492001 (C.G.)

(Category- 'B' under 1(a) (i) of EIA Notification Dated 14.09.2006 and its Subsequent Amendments)

Prepared By

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EXECUTIVE SUMMARY (English)

1.0 INTRODUCTION

This is a greenfield mining project proposed by M/s. Maa Kudargarhi Steel Pvt. Ltd. The proposed project of Sapnadar (Block A, B & C) Bauxite Block having maximum production of bauxite ROM (1,27,800TPA) over an area of 171.136 Ha; located at Village- Sapnadar and Rupakhar, Tehsil-Mainpat, District- Surguja, State- Chhattisgarh. has been granted by Mineral Resource Department, Government of Chhattisgarh for period of 50 Years (LOI Vide Letter No. F3-18/2022/12 Dated 12.07.2023) The total area of the mine lease area is 171.136 Ha.

As per the Ministry of Environment, Forests & Climate Change, New Delhi notification, dated 14th September, 2006 and its subsequent amendments, The proposed project falls in schedule 1 (a) (i) Mining of Minerals of Category 'B' requires Environmental Clearance (EC) to be obtained from State Level Environmental Impact Assessment Authority (SEIAA), Chhattisgarh.

The project proponents have submitted prescribed application along with Pre-Feasibility Report to SEIAA, Chhattisgarh vide proposal no. SIA/CG/MIN/465902/2024 dated 14/03/2024 for seeking terms of references for conducting the EIA Study. The Project was considered for Terms of Reference (TOR) during 561th, SEAC-1 Meeting; Agenda Item no. 1; Dated 04.02.2025. The Terms of Reference was issued State Environment Impact Assessment Authority (SEIAA) Appraisal Committee of SEIAA in the meeting held on 04/02/2025. (under 'B' category) by SEIAA, Chhattisgarh vide letter.no OL/TOR/MIN/SURGUJA/3216 dated 29.04.2025.

Parivesh Environmental Engineering Services, Lucknow, is QCI-NABET accredited environment consultant organization in Category "A" has been assigned to undertake an Environmental Impact Assessment (EIA) study and preparation of Environment Management Plan (EMP) for various environmental components, which may be affected due to the impacts arising out of the proposed project.

1.1 Production capacity

Table E1: Proposed production during Plan Period

Year	Waste Quantity (t)	ROM Quantity (m^3))	Total ROM Quantity (t)	ROM Quantity Saleable Mineral (t)	ROM Quantity Mineral Reject (t)
Year-1	17155.05	11304.45	26000.00	26000.00	0.00
Year-2	30499.07	22174.20	51000.00	51000.00	0.00
Year-3	27699.16	33391.35	76800.00	76800.00	0.00
Year-4	45532.38	45130.50	103800.00	103800.00	0.00
Year-5	102786.10	55565.55	127800.00	127800.00	0.00
Total	**223671.76**	**167566.05**	**385400.000**	**385400.000**	**0.00**

1.2 Location and accessibility

The proposed project Sapnadar Bauxite Block over an area of 171.136 Ha; Maximum production of Bauxite ROM (1,27,800 TPA) at Village- Sapnadar and Rupakhar, Tehsil-Mainpat, District-Surguja, and State- Chhattisgarh. The project site along with its buffer zone falls on Survey of India Toposheet No. 64 N/5. DGPS Co-ordinates of the pillars are tabulated below in Table No. E-2. The Geographical Position of the Mining Lease Boundary Pillars is given below:

Table.E-2: Pillar Co-ordinates

Pillars	Latitude(N)	Longitude(E)
1.	22° 51' 30.50054" N	83° 17' 14.69816" E
2.	22° 51' 29.01291" N	83° 17' 13.29921" E
3.	22° 51' 31.94023" N	83° 17' 8.03275" E
4.	22° 51' 4.69547"N	83° 17' 7.55739" E
5.	22° 51' 34.55541" N	83° 17' 4.66022" E
6.	22° 51' 38.05908" N	83° 17' 1.03251" E
7.	22° 51' 41.19692" N	83° 16' 59.71551" E
8.	22° 51' 41.31847" N	83° 16' 58.30515" E
9.	22° 51' 42.37600" N	83° 16' 53.98200" E
10.	22° 51' 43.33145" N	83° 16' 52.20105" E
11.	22° 51' 47.02837" N	83° 16' 51.74675" E
12.	22° 51' 57.94976" N	83° 16' 51.71604" E
13.	22° 52' 6.24742" N	83° 16' 56.06622" E
14.	22° 52' 10.28141" N	83° 17' 2.36023" E

15.	22° 52' 13.60281" N	83° 17' 9.67912" E
16.	22° 52' 13.16451" N	83° 17' 12.12602" E
17.	22° 52' 9.61636" N	83° 17' 9.65579" E
18.	22° 52' 5.02239" N	83° 17' 17.20148" E
19.	22° 52' 3.14318"N	83° 17' 17.34169"E
20.	22° 52' 1.06351"N	83° 17' 16.48723"E
21.	22° 52' 0.20129"N	83° 17' 14.92449"E
22.	22° 51' 55.22799"N	83° 17' 14.29227"E
23.	22° 51' 45.62122"N	83° 17' 6.17877"E
24.	22° 51' 43.76140"N	83° 17' 6.11858"E
25.	22° 51' 43.23907"N	83° 17' 8.48733"E
26.	22° 51' 38.17139"N	83° 17' 14.27293"E
27.	22° 51' 45.18720"N	83° 17' 20.19720"E
28.	22° 51' 45.60832"N	83° 17' 19.31374"E
29.	22° 51' 46.02174"N	83° 17' 19.09853"E
30.	22° 51' 47.01104"N	83° 17' 19.00520"E
31.	22° 51' 48.55397"N	83° 17' 20.35685"E
32.	22° 51' 54.35799"N	83° 17' 21.33808"E
33.	22° 51' 54.83848"N	83° 17' 23.94866"E
34.	22° 51' 54.60831"N	83° 17' 26.87154"E
35.	22° 51' 58.52210"N	83° 17' 27.62990"E
36.	22° 52' 3.86412"N	83° 17' 26.03232"E
37.	22° 52' 7.67294"N	83° 17' 29.22046"E
38.	22° 52' 8.40812"N	83° 17' 35.06134"E
39.	22° 52' 7.73266"N	83° 17' 41.31617"E
40.	22° 52' 6.52816"N	83° 17' 42.47195"E
41.	22° 52' 4.20502"N	83° 17' 42.63480"E
42.	22° 52' 3.17243"N	83° 17' 44.31165"E
43.	22° 52' 4.09667"N	83° 17' 46.58199"E
44.	22° 52' 4.25307"N	83° 17' 48.17097"E
45.	22° 52' 3.56091"N	83° 17' 48.02780"E
46.	22° 52' 1.95977"N	83° 17' 47.79297"E
47.	22° 52' 0.54595"N	83° 17' 47.64985"E
48.	22° 52' 0.04150"N	83° 17' 47.39398"E
49.	22° 51' 58.92080"N	83° 17' 47.32383"E
50.	22° 51' 58.51328"N	83° 17' 47.41629"E
51.	22° 51' 58.20288"N	83° 17' 48.13190"E
52.	22° 51' 57.72374"N	83° 17' 48.51129"E
53.	22° 51' 56.69288"N	83° 17' 48.69769"E
54.	22° 51' 55.65571"N	83° 17' 49.20372"E
55.	22° 51' 53.23355"N	83° 17' 48.03795"E
56.	22° 51' 53.26053"N	83° 17' 46.98934"E
57.	22° 51' 52.14683"N	83° 17' 46.16249"E
58.	22° 51' 50.40442"N	83° 17' 45.65781"E
59.	22° 51' 48.06054"N	83° 17' 48.19248"E

60.	22° 51' 50.17101"N	83° 17' 49.52886"E
61.	22° 51' 49.85637"N	83° 18' 3.67722"E
62.	22° 51' 49.36811"N	83° 18' 4.17065"E
63.	22° 51' 29.75003"N	83° 18' 3.89975"E
64.	22° 51' 27.41669"N	83° 17' 53.38206"E
65.	22° 51' 35.38045"N	83° 17' 43.71311"E
66.	22° 51' 37.35185"N	83° 17' 43.60404"E
67.	22° 51' 40.92954"N	83° 17' 44.97189"E
68.	22° 51' 48.44402"N	83° 17' 42.19045"E
69.	22° 51' 51.66444"N	83° 17' 41.76103"E
70.	22° 51' 53.67643"N	83° 17' 41.65410"E
71.	22° 51' 51.80783"N	83° 17' 35.89573"E
72.	22° 51' 50.86615"N	83° 17' 34.99123"E
73.	22° 51' 49.96135"N	83° 17' 34.11599"E
74.	22° 51' 48.95744"N	83° 17' 32.93022"E
75.	22° 51' 48.04789"N	83° 17' 31.42730"E
76.	22° 51' 47.03041"N	83° 17' 28.23193"E
77.	22° 51' 46.99668"N	83° 17' 27.36166"E
78.	22° 51' 46.82422"N	83° 17' 25.91709"E
79.	22° 51' 46.32120"N	83° 17' 24.89280"E
80.	22°51'46.11631"N	83° 17' 23.79440"E
81.	22° 51' 46.09793"N	83° 17' 22.03021"E
82.	22° 51' 46.11816"N	83° 17' 21.68972"E
83.	22° 51' 9.66035"N	83° 17' 56.80403"E
84.	22° 51' 9.26586"N	83° 18' 3.92112"E
85.	22° 50' 53.72600"N	83° 18' 4.17100"E
86.	22° 50' 52.07500"N	83° 18' 3.28500"E
87.	22° 50' 51.39800"N	83° 18' 2.20600"E
88.	22° 50' 51.40200"N	83° 17' 52.74200"E
89.	22° 50' 51.80100"N	83° 17' 43.46500"E
90.	22° 50' 53.08401"N	83° 17' 41.76196"E
91.	22° 50' 53.84929"N	83° 17' 41.13251"E
92.	22° 50' 52.08400"N	83° 17' 34.20100"E
93.	22° 50' 52.42300"N	83° 17' 29.74000"E
94.	22° 50' 56.42800" N	83° 17' 28.82300"E
95.	22° 50' 58.40900"N	83° 17' 30.11500"E
96.	22° 50' 58.91400"N	83° 17' 35.67400"E
97.	22° 51' 2.07400"N	83° 17' 37.93100"E
98.	22° 51' 5.74027"N	83° 17' 43.11147"E
99.	22° 51' 6.93151"N	83° 17' 44.42947"E
100.	22° 51' 9.06085"N	83° 17' 45.66971"E
101.	22° 51' 9.40191"N	83° 17' 51.65009"E

The following is the environmental setting within the 10 Km. radius of the plant site:

Table E-3: Environmental settings within 10 Km. radius of the plant site

S. No.	Particulars	Details		
1.	Nearest Villages	**Village**		**Distance & Direction**
		Sapnandar Village		0.5, East Direction
2.	Nearest City/ Town	Ambikapur City is about 28.0 km in NNW direction.		
3.	Nearest Road	Ambikapur to Mainpat Road is passing through Block A & Block C- 0.42km from Block B		
4.	Nearest Railway Station	**Particulars**	**Distance (km)**	**Direction**
		Ambikapur railway	32.9	NNW
5.	Nearest State Highway/ National Highway	NH- 43	15.9	W
6.	Nearest Airport	Veer Surendra Sai Airport, Jharsuguda	128.6	SE
		Ambikapur City Airport /Darima Hawai Patti	15.5	NW
7.	Archaeological Important Places	None		
8.	Reserved/ Protected Forest/ Notified Areas within 10 km radius	Kumatra RF is about 8.72 km in S direction.		
9.	Nearest River / water body	Joki Nala	0.83	N
		Gungata Nala	1.3	South east direction from Block A
		Ghagi nala	6	ESE
		Mangarda Nala	4.5	ESE
		Manchari Nadi	2.3	W
		Gungata Nadi	8.6	NE
		Barnai Nadi	11.43	WNW
		Mahadev Munda River	11.8	E
10.	Nearest Interstate Boundary	None within 10 km radius of study area.		
11.	Seismic Zone	III (Moderate Intensity Zone)		
12.	Health Services / Education Facilities	**Particulars**	**Distance (km)**	**Direction**
		Primary Health Sub Center Paiga	3.87	N
		Primary Health Sub Center Bisarpani	2.1	NNE
		Primary School Maltipur	3.7	E
		Govt. Middle School Maltipur	4.2	SSW
		Government Naveen College	3.7	SE
		Government Industrial Training Institute	5.5	W
		Maa Kali Mandir	3.3	SSW
		Buddhist temple	3.2	SSW

2.0 PROJECT DESCRIPTION

As per Environmental Impact Assessment Notification dated 14th September, 2006 and subsequent amendment thereof, the proposed project falls under S. No. 1 (a) under category "B" and requires Environmental Clearance (EC) to be obtained from SEIAA, Chhattisgarh.

The Sapnadar Bauxite Block was issued vide LOI Vide Letter No. F3-18/2022/12 Nava Raipur, dated 12.07.2023 by Mineral Resource Department, Raipur, Chhattisgarh. The block lies in Survey of India Toposheet 64 N/5.

The proposed greenfield mining project Sapnadar Bauxite Ore Mining Lease is located over an area of 171.136 hectares in Village- Sapnadar and Rupakhar,Tehsil-Mainpat, District- Surguja , State- Chhattisgarh. The LOI has been issued by the Mineral Resource Department, Govt. of Chhattisgarh. The project cost for proposed project is Rs. 28 Cr.

2.1Raw Material Requirement

No raw material is required for the mining.

2.2 Method of Mining

The proposed mining operations will be carried out by conventional open cast fully mechanized method which includes drilling, blasting, loading, unloading and transportation. The mining will be done as per following

- Mining operations envisaged system of bench forming involving deep hole drilling & blasting. The quarry will be developed at different levels. The maximum height of the benches will be kept at 06 m and the width of the working benches will more than 6 m.
- Haulage roads at 1:16 gradient will be maintained for easy movement of machinery and transport vehicles.
- Hydraulic drills will be used for drilling. Diameter of the blast hole drill will be 110 mm.
- Controlled blasting will be in practice. Blasting will be done by using Aluminised Slurry Explosives. NONEL latest technology and delay detonators will be practiced.
- Mechanized mining with excavator Loader tipper combination, the waste and soil will be removed by excavator and will be dumped at designated place. The ROM

will be excavated with due drilling and blasting and sorting sizing will be done within the pit head to segregate the Bauxite ore the mining will be done as per year wise development plan the entire temporary dump will be used in back filling and reclaiming

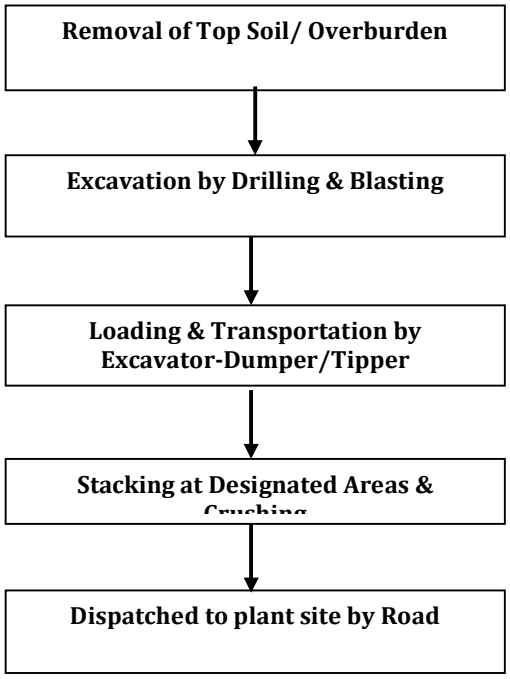

Figure E1: Flow Diagram showing the mining process

2.3 Power Requirement & Supply

Mining activity will be done in general sift (day shift)) only so no extra power is required.

2.4Water Requirement

Total water requirement per day is 17KLD (8.0 KLD will be used for dust suppression and 4.0 KLD will be used for plantation purpose and 5.0 KLD will be used for drinking purpose. Water requirement will be fulfilled from local sources and for drinking purposes ground water source will be used such as handpumps etc.

Table-E4: Water Consumption

Particulars	Water Requirement (KLD)	Source
Drinking water	4.0	Ground water

Water Sprinkling on Mine haulage Roads	8.0	Water required for mining activity will initially be met from ground water and once the mine pits will be developed, mine water will be used.
Greenbelt	5.0	
Total	**17.0**	-

2.5 Project cost

The project cost of the project is estimated as Rs. 28.0 Crores.

2.6 Land Requirement

The over an area of 171.136 Ha., Lease validity is for a period of 50 years from the date of issuance. Forest land is involved in the proposed ML area.

Table E -5: Land Details

Block Name	Government Land	Private Land	Forest Land
Block A	23.56	15.32	3.319
Block B	6.913	29.705	34.073
Block C	-	-	58.246
Total Area	30.473	45.025	95.638

The land use and breakup details are presented in **Table-E- 6.**

Table.E-6: Land Area Breakup

S. No.	Particular	Present Land use in (Ha.)	End of 5th year Land use in(Ha.)	Conceptual/ lease period land use in (Ha.)
1.	Area under Mining	0.00	4.2	156.23
a.	Topsoil stacking	0.00	0.05	0.0
b.	Overburden/Waste Dumping	0.00	0.35	0.0
2	Mineral Storage	0.00	1.34	0.0
3	Infrastructure (Workshop, Administrative Building etc.)	0.00	0.05	0.54
4	Roads	0.00	0.44	0.0
5	Greenbelt	0.00	0.00	5.34 (From undisturbed area)
6	Railway	0.00	0.00	0.0
7	Tailing Pond	0.00	0.00	0.0
8	Effluent Treatment Plant	0.00	0.00	0.0
9.	Mineral Separation Plant	0.00	0.00	0.0
10.	Township Area	0.00	0.00	0.0
11.	Others to specify (Undisturbed land)	171.136	164.706	9.026
Total		**171.136**	**-**	**171.136**

As Per Approved Mining Plan

2.7 Employment Generation (Direct & Indirect) Due to the Project.

The proposed project will generate direct employment for around 108 people. Preference will be given to suitable local people for employment. Apart from the direct employment, there will be many indirect employment opportunities after commencing of the proposed project in the nearby villages.

2.8 Key pollution concerns

S. No	Source	Mitigation measure
1.	Fugitive dust and SOx, NOx due to excavation, drilling, blasting loading, unloading, transportation	Avoid blasting or drilling will be done in windy day. Water sprinkling will be done on periodically to arrest the dust on haul road, mineral stack, overburden stack. Mineral will be transported by covering with tarpaulin. Reduce the speed, check the load limit and force overwrite loading Mask will be provided to workers as safety.
2.	Noise due to drilling, blasting, transportation, use of heavy machinery	Delay blasting, sharp drill will be used. Earmuff will be provided to mine workers
3.	Water	No waste water will be discharged outside the mine area.
4.	Soil	Top soil will be stored at designated place and water sprinkling will be done to reduce the dust generation.

3.0 DESCRIPTION OF BASELINE ENVIRONMENT

Baseline data was generated during pre-monsoon season from 1st March 2024 to 31st May 2024. Baseline environmental studies were conducted at project site along with 10 km radial distance from the project site. Baseline environmental quality data for various environmental component like Air, Noise, Water, Land, Biological Environment and Socio-Economic.

A. Air Quality

Ambient air quality was monitored at 12 stations for $PM_{2.5}$, PM_{10}, SO_2, NO_x & CO including project site. The following are the concentrations of various parameters at the monitoring stations:

Table E-8: AAQ DATA SUMMARY

Parameter	Concentration
PM_{10}	29.2 µg/m³ to 60.5 µg/m³
$PM_{2.5}$	13.5 µg/m³ to 36.3 µg/m³
SO_2	6.3 µg/m³ to 14.8 µg/m³
NO_2	9.4 µg/m³ to 18.9 µg/m³
CO	125µg/m³ to 310 µg/m³

B. Surface Quality

Water samples from 6 surface water bodies have been collected and analysed as per IS standards. Based on test result data comparison study, The analysis of samples shows that all the parameters are in accordance with BIS-2296 specifications.

- pH of the surface water samples collected was in the range of 6.9-7.6
- The Total dissolved solids in the samples were in the range of 85-232 mg/l.
- Total Hardness in the samples were in the range of 38.2-211 mg/l.
- Chlorides concentration was found in the range of 24-38.6mg/l.
- Total Coliforms was found in the range of 45-62 MPN/100ml
- The reported value of DO was in range of 5.8-8.4 mg/l
- Biochemical Oxygen Demand (3 days at 27°C) was found in the range of 1.2 to 1.9 mg/l.
- COD was found in range from 9.4 -18.0 mg/l.
- All the samples were found to be well within the limits.

A. Ground Water

8 Nos. of ground water samples from open wells / bore wells were collected from the nearby villages to assess ground water quality impacts and analyzed for various Physico-Chemical parameters. The analysis of samples shows that all the parameters are in accordance with BIS: 10500 specifications.

- pH of the ground water samples collected was in the range of 7.2– 8.2
- Total Dissolved Solids in the samples was in the range of 153-212 mg/l
- Total hardness was found to be in the range of 34-145 mg/l.
- Chlorides concentration was found to vary between 7.1-15.3 mg/l.
- The fluoride concentration was found to be in the range of 0.4 – 0.6mg/l.

- Sulphate was found in the range of 1-18.2 mg/l.
- Heavy metal concentrations in all the samples were found to be well within the limits.

B. Noise Quality

Noise levels were measured at 12 locations during day time & Night time. The Maximum Noise (day) value was observed 55.2 dB(A) and the minimum noise (day) value was observed 40.5 dB(A). The Maximum Noise (night) value was observed 43.5 dB(A) and the minimum noise (night) valve was observed 29.2dB(A).

C. Soil Environment

- pH is found to be neutral 6.7-8.5. Based on the pH values, soil nature in the study area is found to be neutral to moderate alkaline.
- The bulk density of the soil in the study area ranged between 1.14-1.15 gm/cm which indicates favourable physical condition for plant growth.
- As based on result of available concentration of major nutrients fertility status of soil with respect to NPK value is found to be in the range of 122.24-220.3 kg/ha (better), 8.20-44 kg/ha (less) and 130.4-318.3 kg/ha (medium) respectively.
- Organic carbon was found in the range of 0.8% – 1.2%

D. Biological Environment

- Total 174 plant species were observed in the study area
- Following Schedule – I faunal species are found in the 10 km radial study area of the project site. (1) Indian Jackal (*Canis aureus*) (2) Indian fox (*Vulpes bengalensis*) (3) Common Mongoose (*Herpestes edwardsii*) (4) Indian Cobra (*Naja naja*) (5) Common Rat Snake (*Ptyas mucosa*) (6) Spiny Tailed Lizard (*Saara Hardwickii*) (7) Indian Porcupine (*Hystrix Indica*) (8) Jungle cate (*Felis Chaus*) (9) Python (*Python molurus*) (10) Indian Chameleon *(Chamaeleon Zeylanicus).*
- No national park or wildlife sanctuary or biosphere reserve is present in the study area. No endangered species of flora and fauna is found in the study area.

E. Socio Economy

- Total Population of the villages in the Study area (10 Km radius) is 58823
- Sex Ratio (No. of females per 1000 Males) is 978
- The percentage of schedule caste in the study area is 4.07% while the 69.29% only population is of Scheduled tribe
- The literacy rate in study area is 39.57 %; Male literacy rate is 24.05 %; Female literacy rate is 15.52 %;

F. Land Use Land Cover Classification

The Land Cover classes and their coverage are summarized below:

S. No.	LU/LC Class	Area (Ha.)	% of area
1.	Settlement	902.17	2.29
2.	Forest	572.28	1.45
3.	Open Mixed Jungle	21536.4	54.67
4.	Water Bodies	206.07	0.523
5.	Stone Quarry/Waste	260.84	0.67
6.	Plantation	110.19	0.279
7.	Open Scrub	14.25	0.036
8.	Agricultural Land	15788.94	40.082
Total Study area		**39391.14**	**100**

4.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

A. Prediction of impacts on air quality

The likely emissions from the proposed project are PM_{10}, $PM_{2.5}$, SO_2 and NOx. In the present case, predictions of Ground level concentrations have been carried out using ISCST -3 model.

The incremental GLC values of PM_{10}, $PM_{2.5}$, SO_2 and NOx, CO around the project site is presented as isopleths in Chapter**-4.**

Table -E-9: Net Resultant Maximum Concentrations

Item	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)
Maximum baseline conc. in the study area	48.6	28.3	18.9	11.5

Item	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)
Maximum predicted incremental rise in concentration due to proposed project (Area Sources)	7.53	3.90	4.88	2.09
Net resultant concentrations during operation of the proposed project	56.13	32.2	23.78	13.59
National Ambient Air Quality Standards	100	60	80	80
The net resultant Ground level concentrations during operation of the proposed project are within the NAAQS. Hence, there will not be any adverse impact on air environment due to the proposed project.				

The net resultant Ground level concentrations during operation of the project are within the NAAQS. Hence there will not be any adverse impact on air environment due to the proposed project.

B. Prediction of impacts on Noise quality

Noise generating sources are operation of mining equipment and movements of vehicles. Transportation activities are the main sources of noise production. The noise generated by the mining activity will be dissipated within a small zone around the mines. Pronounced effect of above noise levels will be felt only near the active working area. The ambient noise levels will be within the standards prescribed by MoEF&CC i.e. the noise levels will be less than 75 dB(A) during day time and less than 70 dB(A) during night time. Total 171.136ha, out of this 5.34Ha.will be developed for green area. Hence, there will not be any adverse impact due to noise on population in surrounding areas due to the proposed project.

C. Prediction of impacts on Water Environment

No waste water will be generated from the mining activity. Sewage waste water will be diverted to Septic tank followed by soak pit. No adverse impact is envisaged.

D. Prediction of impacts Socio - Economic Environment

There will be certain upliftment in socio economic status of the people in the area & development of the area due to the proposed project.

Due to this the economic conditions, the educational and medical standards of the people living in the study area will certainly move upwards which will result in overall economic development, improvement in general aesthetic environment and increase in business opportunities.

E. Prediction of Impacts on Land Environment

The Mining area is predominantly Forest land (95.638 Ha.), Govt. Land (non-forest-30.473Ha), and Private Landt land- 45.025Ha. as per revenue records.

- Approximately 4.2 hectares area will be mined out by the end of five years and by the end of conceptual period/ lease period about 156.23 hectares area will be mined out. By the end of conceptual period 156.23 hectares area will be reclaimed and plantation will be done.
- Mining activity will be confined to the mineralized zone only.
- There is no perennial streams reported within the proposed Mining Lease area. One small first order Seasonal Nala is flowing towards north and one towards south which mainly works as a local natural drainage during monsoon. There is no pond in the nearby area.
- Garland drains with siltation pit is proposed for construction around pit temporary dump during the plan period.
- With effective EMP, the post mining scenario will have green cover, partial water bodies to enrich the eco-system.
- In buffer zone, no adverse impact is envisaged, as the mining activities will be restricted to core zone only.
- Application for diversion of forest land(8.199Ha.). has been submitted vide proposal no. FP/CG/MIN/QRY/507067/2024 on 21/11/2024

It will be compensated for the affected agricultural land in accordance with State Government policy and rates.

F. Biological Environment

There is no ecological sensitive area like national park, sanctuary, biosphere reserve, within 10 km radial distance from the mine site. Thus, no significant impact envisaged on biological environment.

5.0 SITE ALTERNATIVE

Since the project envisages opening of an opencast mine and the mining is a site-specific activity guided by deposit, geology and mineralization, the alternate site analysis has not been done.

6.0 ENVIRONMENTAL MONITORING PROGRAM

Environmental Management Cell (EMC) will be set up to undertake routine environmental monitoring. Monitoring will be done to ensure compliance with the prescribed laws and standards. The Head of EMC will report to the Plant Head. Qualified staff will be recruited in EMC. Environmental monitoring of ambient air, stack emission, fugitive dust emission, noise levels, groundwater quality, surface water quality and soils will be carried out as per norms.

Table- E-10: Environmental Monitoring Programme

S. No.	Potential Impact	Parameters for Monitoring	Frequency of Monitoring	Measurement Method	Location
1.	Meteorological	Wind Speed; Wind Direction; Max. Temperature; Min. Temperature; Dry bulb temperature; Wet Bulb temperature; Relative Humidity; Rainfall; Cloud cover.	24 hourly continuous	Automatic Weather Monitoring station.	Mine Site
2.	Air Emission	PM_{10}, $PM_{2.5}$, SO_2, NO_X and CO etc. as per CPCB/ MoEF&CC Guidelines	24 hourly twice a week	As per CPCB Guidelines Gravimetric method, Improved West and Gaeke Method, Jacob & Hochheiser modified (NaOHNaAsO2) Methodetc.	4 locations (along the boundary of ML area)
3.	Noise	Spot Noise level recording Leq (day), Leq (night), Leq (dn)	Once in a season (24 hours monitoring on hourly basis)	IS: 4954-1968 as adopted by CPCB.	4 locations (Mine office and along the boundary of ML area)

S. No.	Potential Impact	Parameters for Monitoring	Frequency of Monitoring	Measurement Method	Location
4.	Water Quality	pH, Temperature, Turbidity, Magnesium Hardness, Total Alkalinity, Chloride, Sulphate, Nitrate, Fluoride, Sodium, Potassium, Salinity, Total Nitrogen, Total Phosphorous,Total coli forms, faecal coli forms etc.	Once in season	Samples for water quality will be collected and analyzed as per: IS: 2488 (Part 15) methods for sampling and testing of Industrial effluents. Standards methods for examination of water and waste water analysis published by American Public Health Association.	One location in core area and four in Buffer area.
5.	Health	Occupational Health	Initial Medical Examination (IME) and Periodic Medical Examination – Once in a five year as per Mines Rules, 1955. For Silicosis – Once in five years.	--	All employees
5.	Greenbelt	Number of plantation (Units), Number of Survived plants/ trees, Number of poor plants/ Trees	Ongoing- round the year	As per CPCB/MOEFCC guidelines	-
6.	Environmental Audit	With Respect to Environment Clearance, Consent conditions and ISO 140001.	Once in a Year	As per CPCB/MOEFCC Guidelines	-

7.0 ADDITIONAL STUDIES

There are no habitations in the total land. Envisaged for the project premises. Hence, no rehabilitation and resettlement are involved.

Risk Assessment:

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.

The following types of hazards are identified during the Bauxite mining operations: -

- Fall of machinery/ person from benches
- Failure of transport machinery
- Heavy rainfall resulting in inundation of mine
- Accidents due to blasting/explosives
- Accidents due to fire
- From Electric line through the area
- Road accidents

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

Step 6: Maintain Assessment records

Step 7: Review

The assessment of risk in the proposed project has been estimated and corresponding mitigation measures are suggested in the EIA/EMP report.

8.0 PROJECT BENEFITS

The proposed project will generate direct employment for around 108 people. Preference will be given to suitable local people for employment. Apart from the direct employment, there will be many indirect employment opportunities after commencing of the proposed project in the nearby villages All the labour/manpower will be hired from the local places. CSR activities will be done as per rules of Government of India. The Budgetary provision will be made as per norms.

9.0 ENVIRONMENTAL MANAGEMENT PLAN

A. Air Environment

The following are air emission control systems proposed in the proposed project:

S. No	Source	Mitigation measure
1.	Fugitive dust and SOx, NOx due to excavation, drilling, blasting loading, unloading, transportation	Avoid blasting or drilling will be done in windy day. Water sprinkling will be done on periodically to arrest the dust on haul road, mineral stack, overburden stack. Mineral will be transported by covering with tarpaulin. Reduce the speed, check the load limit and force overwrite loading Mask will be provide to workers as safety.

Dust Suppression System

Water sprinklers will be provided at the unloading areas of the raw materials for dust suppression. Dust suppression system will be provided with plain water - comprising of piping network, valves, pumps, instrumentation & control, water tank etc.

Internal Roads

All internal roads will be graded to prevent the fugitive dust emission due to vehicular movement.

B. Water Environment

No waste water will be generated from the mining activity. Sewage waste water will be diverted in septic tank followed by soak pit. The mine pit collected water will be tested regularly. There will not be any discharge from mine site. Hence, no impact is envisaged.

C. Noise Environment

Major noise-generating source will be deployed HEMM machinery, drilling and blasting for mining and transportation of mineral. The proposed equipment of the proposed project would be designed for noise levels not exceeding 75 dB (A). In general, the following methods will be adopted to control the noise pollution.

- The noise levels will be confined to the working zones of the mining.
- Ear plugs will be provided to all workers who will enter into the noise prone areas.
- Community noise levels are not likely to be affected due to the proposed thick green belt and attenuation due to the physical barriers.
- The ambient noise levels will be in accordance with MoEF&CC norms i.e. ambient noise levels will be < 75 dBA during daytime and < 70 dBA during night time.

D. Land Environment

Proposed backfilling or Reclamation for plan period (Year - Wise)

S. No.	Year	Pit ID	Area in m3	Top RL in m	Bottom RL in m
1.	2nd Year	Pit 1	16426.83	1016	1010
2.	3rd year	Pit 1	15161.84	1016	1011
3.	4th year	Pit 1	15537.63	1016	1009
4.	5th year	Pit 1	13270.00	1015	1008

Greenbelt will be developed in the safety barrier. Desirable beautification and landscaping practices will be followed. Hence there will not be any impact due to the proposed project.

Solid Waste

As per the approved mining plan, overburden, reject material, and topsoil will be systematically excavated and stored at designated locations to minimize environmental impact and facilitate future reclamation. At the conceptual closure stage, the accumulated waste material will be utilized for backfilling in an area of approximately 4.16 hectares, thereby aiding in landform restoration and promoting ecological rehabilitation.

Table E.14: Municipal Solid Waste Generation & Its Disposal

Type of Solid waste	Proposed (TPA)	Total (TPA)	Proposed method of disposal
Canteen waste (Biodegradable)	4.05	4.05	Used in composting / Vermiculture Used as manure for greenbelt development within the premises

E. Green Belt Development

- 7.5 m-10 m wide greenbelt will be developed all around the project site.
- Local DFO will be consulted in developing the green belt.
- The tree species to be selected for the plantation are pollutant tolerant, fast growing, wind firm, deep rooted. A three-tier plantation is proposed comprising of an outer most belt of taller trees which will act as barrier, middle core acting as air cleaner and the innermost core which may be termed as absorptive layer consisting of trees which are known to be particularly tolerant to pollutants.
- Greenbelt will be developed as per CPCB guidelines
- Local and native species will be planted with a density of 2500 trees per hectare

The following points will be considered for selection of plants species:

- Greenbelt absorbs both gaseous as well as particulate pollutants to a great extent. For absorbance of gases, the duration of the foliage should be longer.
- Characteristics of tree/plants including shapes of crowns considered necessary for effective removal of dust particles.
- Greenbelt/Plant species having good root system will be selected, so that soil erosion rates can be controlled significantly.

F. Cost for Environment Protection

Table E15: Cost for Environmental protection

S. No	Particulars	Capital Cost (Rs. In Lacs)	Recurring Cost/ Annum (Rs. In Lacs)
I.	**Environmental Management Measures**		
	Water Pollution Control, Management & Conservation		
A	Roof Top Rain Water Harvesting	10	0.5
B	Oil and Grease trap at HEMM washing centre	5	0.5
C	Others (Garland Drain, Retaining walls, Settling tank etc.)	10	2
II.	**Air Pollution Control & Management**		
A	One water tanker for water sprinkling on haul roads.	12	5
III.	**Ecological and Bio-diversity**		

A.	Green Belt (Phase wise greenbelt development during course of mine)	135.5	13.35
	TOTAL	**170.5**	**21.35**

9.0 Conclusion

The operation of mine lease has significant positive impact on the socio-economic environment of the area which helps for development of this area including further development of physical infrastructure facilities. In the interest of improve the social conditions of the local habitants this project should be allowed after considering all the environment aspects.

The region shall also be benefited from the project as there will be direct employment of people. Preference will be given to the people of the state possessing requisite skill and qualification criteria. Also, there will be lot of scope for indirect employment of the people of the state in and around the project site like in transportation sector.

In view of the above the proposed project of **M/s. Maa Kudargarhi Steel Pvt. Ltd.** is technically feasible and financially viable.

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