

EXECUTIVE SUMMARY**1.0 INTRODUCTION**

The company “**SDRM Metaliks Private Limited**” is newly incorporated Private Limited Company registered under the Companies Act 2013 with an objective to set up an DRI based Steel Plant along with Captive power plant.

M/s. SDRM Metaliks Private Limited has proposed for implementation of new manufacturing facilities for production of Sponge Iron, Ferro Alloys and/or Pig Iron; and Fly Ash products along with captive power generation plant comprising of Waste Heat Recovery Boilers (WHRB) and Atmospheric Fluidized Bed Combustion (AFBC) Boiler along with Steam Turbine & Generator. This is Greenfield project and will be established in 12.635 Ha total land area.

Following facilities are proposed in an area of 12.635 Ha. (Private companies owned diverted for industrial purpose) at Village Joratarai, Tahsil and District - Rajnandgaon (CG):-

- Two No. 350 TPD DRI Kilns for producing 2,31,000 TPA Sponge Iron along with 16 MW WHRB boilers.
- Three Nos. of Submerged Arc Furnaces each with 9 MVA input power capacity will be installed for production of Ferro Alloys i.e. SiMn 51,000 and/or FeMn 64,000 TPA and/or, and/or, FeSi 28,000 TPA and/or Pig Iron of 102,000 TPA.
- Coal based AFBC based Captive power plant of 09 MW power generation capacity.
Thus, total captive power generation will be 25 MW (16 MW WHRB + 9 MW AFBC).

Fly Ash Bricks and other building material product manufacturing facility of 37,500 TPA will also be implemented.

As per Environmental Impact Assessment Notification dated 14th September, 2006 and subsequent amendment thereof, the Sponge Iron, Steel Melting Shop (Induction Furnace) and Ferro Alloys Plants falls under **Sector 3 (a)** and the AFBC based power plant falls under **Sector 1 (d)**. The overall project activity is categorized as **Category “A”**; therefore, it will require Environmental Clearance (EC) to be obtained from EAC (Industry –I), MoEFCC, New Delhi.

The application for prior Environmental Clearance (Form-1) for proposed metallurgical project was submitted to EAC, MoEFCC, New Delhi (Online Proposal No. IA/CG/IND1/466423/2024) on 29th March, 2024.

The proposal was considered by the Expert Appraisal Committee (EAC) and Standard ToR was granted on 24/06/2024 (vide. file no.: IA-J-11011/131/2024-IA-II (Ind-I)).

Anacon Laboratories Pvt. Ltd., Nagpur, is QCI-NABET accredited in ‘Category A’ environment consultant organization 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.

The Environmental Impact Assessment (EIA) report is prepared for obtaining Environmental Clearance (EC) from Ministry of Environment, Forest and Climate Change (MoEFCC), New Delhi and the Consent for Establishment from the Chhattisgarh Environment Conservation Board (CECB) for the proposed Greenfield project.

1.1 IDENTIFICATION OF PROJECT

M/s. SDRM Metaliks Private Limited proposes Greenfield project involving Sponge Iron, Ferro Alloys and/or Pig Iron; and Fly Ash products along with captive power generation plant comprising of Waste Heat Recovery Boilers (WHRB) and Atmospheric Fluidized Bed Combustion (AFBC) Boiler along with Steam Turbine & Generator. The project is proposed to be located at Village – Joratarai, Tahsil and District – Rajnandgaon (CG – 491441). The proposal is to seek Environment Clearance based on energy efficient as well as well proven technology process.

TABLE 1: PROPOSED PLANT DETAILS WITH CAPACITY

S. No.	Process plant	Proposed configuration of the plant	Product Name	Capacity (in TPA)
1	DRI Kiln (Coal Fired)	350 TPD X 2 Nos.	Sponge Iron	2,31,000
2	Sub-Merged Arc Furnace	Electrically operated Sub-Merged Arc Furnace 9 MVA x 3 Nos	Ferro Alloys - SiMn	51,000
			And/Or	
			Ferro Alloy – FeMn	64,000
			And/Or	
			Ferro Alloy – FeSi	28,000
3	Captive Power Plant (Boiler and TG based)	Waste Recovery Heat Boilers (WHRB)	Captive Power	16 MW
		Atmospheric fluidized bed combustion (AFBC)		9 MW
4	Fly Ash Bricks/ Block making unit	Fly Ash product making facilities	Fly Ash Bricks/ Blocks	37,500

1.2 LOCATION OF THE PROJECT

The proposed project located at Village - Joratarai, Tehsil and District - Rajnandgaon (CG – 491441). The nearest city is Rajnandgaon which is around 19.53 km in WSW direction. Nearest airport is Bhilai Airport, (Pvt. Air Port of SAIL) which is around 22.65 km at NE direction. The project site can be reached from nearest city Rajnandgaon through NH-53 is adjacent from the site and from District headquarters Rajnandgaon through National highway namely NH-53. The project is well connected to all weather roads. Nearest railway station is Rasmada Railway Station which is about 3.38 km, NNE from the project site. The 10 km radius study area falls in Toposheet no. 64G/3, 64G/7, 64G/4 and 64G/8.

The study area of 10 km radial distance from the project site is shown in **Figure 1**.

1.3 EIA/ EMP REPORT

As per approved ToR obtained from EAC (Industry –I), MoEFCC, New Delhi, baseline environmental monitoring was already conducted during winter season (1st December 2023 – 29th February 2024) has been considered for determining the status of ambient air quality, ambient noise levels, surface and groundwater quality, soil quality, status of flora, fauna and eco-sensitive areas and socio-economic status of the villages within 10 km radius study area from the project site (**Figure 1**). The observations of the studies are incorporated in the EIA/EMP report. Impacts of the proposed project activities during construction and operation stages were identified and duly addressed in the EIA- EMP report.

EIA - EMP report along with the proposed management plan to control/ mitigate the impacts. Environmental Management Plan is suggested to implement the pollution control in the project.

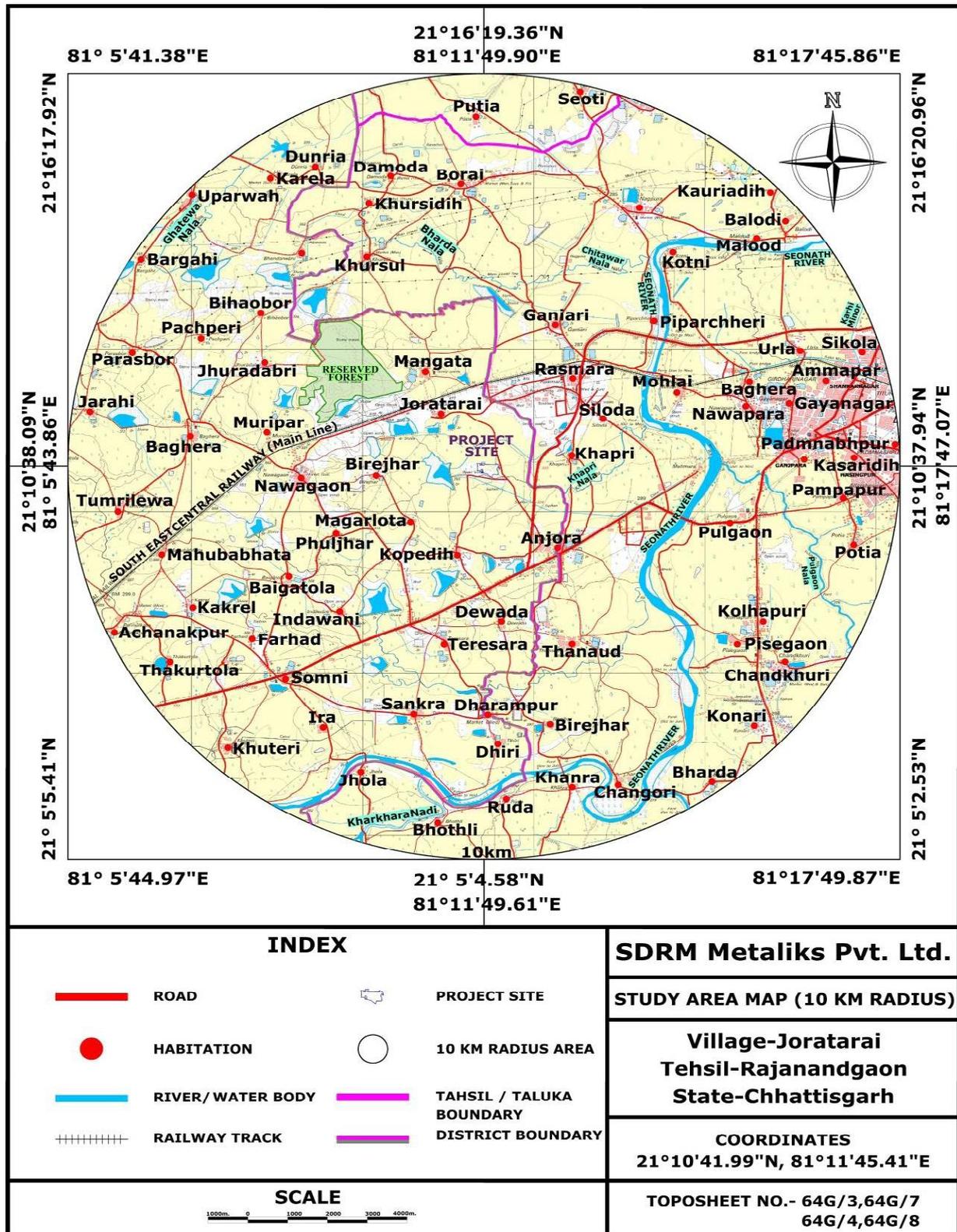


FIGURE 1 A: STUDY AREA (10 KM RADIAL DISTANCE)

TABLE 2: DETAILS OF ENVIRONMENTAL SETTINGS

Sr. No.	Particular	Details																																																																																																								
1	Plant Location	Village- Joratarai, Tahsil and District- Rajnandgaon (Chhattisgarh) Pin Code – 491441																																																																																																								
2	Coordinates	Village- Joratarai, Tahsil and District- Rajnandgaon (Chhattisgarh) Pin Code – 491441 Geo Coordinate: <table border="1"> <thead> <tr> <th>LATITUDE</th> <th>LONGITUDE</th> <th>LATITUDE</th> <th>LONGITUDE</th> </tr> </thead> <tbody> <tr><td>21°10'43.42"N</td><td>81°11'40.22"E</td><td>21°10'39.04"N</td><td>81°11'57.25"E</td></tr> <tr><td>21°10'43.25"N</td><td>81°11'44.18"E</td><td>21°10'37.89"N</td><td>81°11'57.50"E</td></tr> <tr><td>21°10'44.43"N</td><td>81°11'44.05"E</td><td>21°10'36.79"N</td><td>81°11'58.18"E</td></tr> <tr><td>21°10'44.39"N</td><td>81°11'46.82"E</td><td>21°10'34.59"N</td><td>81°11'58.55"E</td></tr> <tr><td>21°10'43.24"N</td><td>81°11'46.73"E</td><td>21°10'34.51"N</td><td>81°11'57.94"E</td></tr> <tr><td>21°10'43.20"N</td><td>81°11'44.21"E</td><td>21°10'33.91"N</td><td>81°11'57.86"E</td></tr> <tr><td>21°10'42.61"N</td><td>81°11'44.24"E</td><td>21°10'34.16"N</td><td>81°11'53.43"E</td></tr> <tr><td>21°10'42.62"N</td><td>81°11'42.53"E</td><td>21°10'31.72"N</td><td>81°11'53.07"E</td></tr> <tr><td>21°10'42.17"N</td><td>81°11'42.57"E</td><td>21°10'32.88"N</td><td>81°11'50.94"E</td></tr> <tr><td>21°10'42.08"N</td><td>81°11'46.02"E</td><td>21°10'34.89"N</td><td>81°11'48.51"E</td></tr> <tr><td>21°10'42.50"N</td><td>81°11'46.03"E</td><td>21°10'34.87"N</td><td>81°11'47.43"E</td></tr> <tr><td>21°10'42.43"N</td><td>81°11'56.20"E</td><td>21°10'35.66"N</td><td>81°11'44.75"E</td></tr> <tr><td>21°10'43.34"N</td><td>81°11'56.29"E</td><td>21°10'36.15"N</td><td>81°11'45.13"E</td></tr> <tr><td>21°10'42.22"N</td><td>81°11'58.78"E</td><td>21°10'38.47"N</td><td>81°11'44.84"E</td></tr> <tr><td>21°10'42.71"N</td><td>81°11'58.87"E</td><td>21°10'38.40"N</td><td>81°11'43.84"E</td></tr> <tr><td>21°10'39.53"N</td><td>81°11'59.78"E</td><td>21°10'36.11"N</td><td>81°11'44.36"E</td></tr> <tr><td>21°10'38.89"N</td><td>81°11'59.04"E</td><td>21°10'35.63"N</td><td>81°11'44.17"E</td></tr> <tr><td>21°10'39.62"N</td><td>81°11'59.00"E</td><td>21°10'35.64"N</td><td>81°11'43.86"E</td></tr> <tr><td>21°10'39.80"N</td><td>81°11'58.69"E</td><td>21°10'36.72"N</td><td>81°11'43.36"E</td></tr> <tr><td>21°10'40.42"N</td><td>81°11'58.58"E</td><td>21°10'37.33"N</td><td>81°11'42.81"E</td></tr> <tr><td>21°10'40.72"N</td><td>81°11'58.40"E</td><td>21°10'37.15"N</td><td>81°11'42.13"E</td></tr> <tr><td>21°10'40.71"N</td><td>81°11'58.30"E</td><td>21°10'37.40"N</td><td>81°11'41.35"E</td></tr> <tr><td>21°10'39.90"N</td><td>81°11'58.37"E</td><td>21°10'37.18"N</td><td>81°11'40.56"E</td></tr> <tr><td>21°10'39.82"N</td><td>81°11'57.94"E</td><td>21°10'40.85"N</td><td>81°11'40.60"E</td></tr> <tr><td>21°10'39.16"N</td><td>81°11'57.64"E</td><td></td><td></td></tr> </tbody> </table>	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	21°10'43.42"N	81°11'40.22"E	21°10'39.04"N	81°11'57.25"E	21°10'43.25"N	81°11'44.18"E	21°10'37.89"N	81°11'57.50"E	21°10'44.43"N	81°11'44.05"E	21°10'36.79"N	81°11'58.18"E	21°10'44.39"N	81°11'46.82"E	21°10'34.59"N	81°11'58.55"E	21°10'43.24"N	81°11'46.73"E	21°10'34.51"N	81°11'57.94"E	21°10'43.20"N	81°11'44.21"E	21°10'33.91"N	81°11'57.86"E	21°10'42.61"N	81°11'44.24"E	21°10'34.16"N	81°11'53.43"E	21°10'42.62"N	81°11'42.53"E	21°10'31.72"N	81°11'53.07"E	21°10'42.17"N	81°11'42.57"E	21°10'32.88"N	81°11'50.94"E	21°10'42.08"N	81°11'46.02"E	21°10'34.89"N	81°11'48.51"E	21°10'42.50"N	81°11'46.03"E	21°10'34.87"N	81°11'47.43"E	21°10'42.43"N	81°11'56.20"E	21°10'35.66"N	81°11'44.75"E	21°10'43.34"N	81°11'56.29"E	21°10'36.15"N	81°11'45.13"E	21°10'42.22"N	81°11'58.78"E	21°10'38.47"N	81°11'44.84"E	21°10'42.71"N	81°11'58.87"E	21°10'38.40"N	81°11'43.84"E	21°10'39.53"N	81°11'59.78"E	21°10'36.11"N	81°11'44.36"E	21°10'38.89"N	81°11'59.04"E	21°10'35.63"N	81°11'44.17"E	21°10'39.62"N	81°11'59.00"E	21°10'35.64"N	81°11'43.86"E	21°10'39.80"N	81°11'58.69"E	21°10'36.72"N	81°11'43.36"E	21°10'40.42"N	81°11'58.58"E	21°10'37.33"N	81°11'42.81"E	21°10'40.72"N	81°11'58.40"E	21°10'37.15"N	81°11'42.13"E	21°10'40.71"N	81°11'58.30"E	21°10'37.40"N	81°11'41.35"E	21°10'39.90"N	81°11'58.37"E	21°10'37.18"N	81°11'40.56"E	21°10'39.82"N	81°11'57.94"E	21°10'40.85"N	81°11'40.60"E	21°10'39.16"N	81°11'57.64"E		
LATITUDE	LONGITUDE	LATITUDE	LONGITUDE																																																																																																							
21°10'43.42"N	81°11'40.22"E	21°10'39.04"N	81°11'57.25"E																																																																																																							
21°10'43.25"N	81°11'44.18"E	21°10'37.89"N	81°11'57.50"E																																																																																																							
21°10'44.43"N	81°11'44.05"E	21°10'36.79"N	81°11'58.18"E																																																																																																							
21°10'44.39"N	81°11'46.82"E	21°10'34.59"N	81°11'58.55"E																																																																																																							
21°10'43.24"N	81°11'46.73"E	21°10'34.51"N	81°11'57.94"E																																																																																																							
21°10'43.20"N	81°11'44.21"E	21°10'33.91"N	81°11'57.86"E																																																																																																							
21°10'42.61"N	81°11'44.24"E	21°10'34.16"N	81°11'53.43"E																																																																																																							
21°10'42.62"N	81°11'42.53"E	21°10'31.72"N	81°11'53.07"E																																																																																																							
21°10'42.17"N	81°11'42.57"E	21°10'32.88"N	81°11'50.94"E																																																																																																							
21°10'42.08"N	81°11'46.02"E	21°10'34.89"N	81°11'48.51"E																																																																																																							
21°10'42.50"N	81°11'46.03"E	21°10'34.87"N	81°11'47.43"E																																																																																																							
21°10'42.43"N	81°11'56.20"E	21°10'35.66"N	81°11'44.75"E																																																																																																							
21°10'43.34"N	81°11'56.29"E	21°10'36.15"N	81°11'45.13"E																																																																																																							
21°10'42.22"N	81°11'58.78"E	21°10'38.47"N	81°11'44.84"E																																																																																																							
21°10'42.71"N	81°11'58.87"E	21°10'38.40"N	81°11'43.84"E																																																																																																							
21°10'39.53"N	81°11'59.78"E	21°10'36.11"N	81°11'44.36"E																																																																																																							
21°10'38.89"N	81°11'59.04"E	21°10'35.63"N	81°11'44.17"E																																																																																																							
21°10'39.62"N	81°11'59.00"E	21°10'35.64"N	81°11'43.86"E																																																																																																							
21°10'39.80"N	81°11'58.69"E	21°10'36.72"N	81°11'43.36"E																																																																																																							
21°10'40.42"N	81°11'58.58"E	21°10'37.33"N	81°11'42.81"E																																																																																																							
21°10'40.72"N	81°11'58.40"E	21°10'37.15"N	81°11'42.13"E																																																																																																							
21°10'40.71"N	81°11'58.30"E	21°10'37.40"N	81°11'41.35"E																																																																																																							
21°10'39.90"N	81°11'58.37"E	21°10'37.18"N	81°11'40.56"E																																																																																																							
21°10'39.82"N	81°11'57.94"E	21°10'40.85"N	81°11'40.60"E																																																																																																							
21°10'39.16"N	81°11'57.64"E																																																																																																									
3	Topo sheet no.	64G/3, 64G/7, 64G/4 and 64G/8																																																																																																								
4	Elevation	316m to 327m																																																																																																								
5	Nearest representative IMD station	IMD Rajnandgaon - 19.53 km / WSW																																																																																																								
6	Nearest highway	1.NH53 - 0.95 km/E 2.SH7 - 6.60 km/E																																																																																																								
7	Nearest railway station	Rasmada Railway Station - 3.38 km/NNE Muripar Railway Station - 4.50 km/WNW Durg Railway Station - 9.8 km/ENE																																																																																																								
8	Nearest Air Port	Bhilai Airport-22.65km/NE (Pvt. Air Port of SAIL) Swami Vivekananda Airport, Raipur-56.10km/E																																																																																																								
9	Nearest village	Joratarai - 1.50km/NW																																																																																																								
10	Nearest Port	Gopalpur Port - 444km/SE																																																																																																								
11	Distance from Sea Coast	Bay of Bengal - 429.40km/SE																																																																																																								
12	Nearest major city with 2,00,000 population	Rajnandgaon 19.53 KM/WSW																																																																																																								
14	Nearest State/National Boundaries	Maharashtra - 54.82 km/WNW																																																																																																								
15	Hills/Valleys	Not in 10 KM radius																																																																																																								
16	Ecologically sensitive	Not in 10 KM radius																																																																																																								

Sr. No.	Particular	Details			
	zone				
17	National Parks, Wildlife Sanctuaries, etc.	Not in 10 KM radius			
18	Nearest Reserved / Protected forests	Mangata Reserved Forest - 2.91 km/NW			
19	Historical/Tourist places	Tourist place Mangata Jungle & Safari Park 4.57 KM/NW			
20	Nearest Industries	S.No.	Name	Distance (Km)	Direction
		1	Crest Steel and Power Ltd.	1.18	N
		2	JD Food Products Pvt. Ltd. Rasmada	1.85	N
		3	Raipur Power And Steel Ltd.	2.54	NE
		4	MSME Technology Centre, Durg	1.76	NE
		5	Sona Beverages Pvt. Ltd.	1.77	NE
		6	Suvidhi Ispat Pvt. Ltd.	2.36	NE
		7	Topworth Steels and Power	1.70	NE
		8	Simplex Engineering & Foundry Works Pvt. Ltd.	3.62	WSW
		9	P.S. Steel Tubes Ltd.	3.92	SSW
21	Nearest Water Bodies	S. No.	Name	Distance (Km)	Direction
		1	Khapri Nala (seasonal Monsoon drain)	Adjoining	S
		2	Pond in Kopedeeh	2.24	SSW
		3	Pond in Jortarai	1.03	NW
		4	Pond in Anjora	2.64	SE
		5	Shivnath River	5.42	E
		6	Kharkhara Nadi	8.78	SSW
		7	Pulgaon Nala	5.81	E
		8	Ghatewa Nala	9.48	NW
		9	Bharda Nala	5.10	N
		10	Pond in Khapri	1.53	E
11	Karhi Minor	6.83	NE		
22	Archaeological Sites	None			
23	Religious Places	S. No.	Name	Distance (Km)	Direction
		1	Shri Pahadipath Temple	3.82	WNW
		2	Mahadev and Hanuman Temple	3.13	ESE
		3	Gangotri Shiv Mandir	2.80	SSE
		4	Chhatagarh Temple	4.40	ENE
		5	Nagpura Jain Derasar	5.83	NNE
		6	Shri Nagpura Bhairav Bavdi	5.97	NNE
		7	Shree Uwassaggaharam Parshwa Tirth	5.88	NNE
		8	Shiv Temple	8.17	NNE
		9	Sitla Mandir Rasmada	3.40	NE
		10	Durg Dada Badi Jain Mandir	9.52	ENE
		11	Rumi Baba Mazaar	8.90	E
		12	Durga Mata Mandir	7.18	ENE
24	Hospitals and Education Institutions (Sensitive Manmade Landuse)	HOSPITALS			
		Sr. No.	Name	Distance (Km)	Direction
		1	Shri Sai Hospital	8.75	ENE

Sr. No.	Particular	Details			
		2	SMY-Pandurang Ramarao Dongaonkar District Hospital Durg	8.33	ENE
		3	R R Hospital	9.13	ESE
		4	Central India Institute of Mental Health and Neuro Sciences	3.15	SSW
		5	UP-Swastha Kendra Baghera	7.08	W
EDUCATIONAL INSTITUTIONS					
		Sr. No.	Name	Distance (Km)	Direction
		1	Govt. School Khapri	1.72	ENE
		2	Government Higher Secondary School, Rasmada	3.07	NE
		3	Primary School Joratarai	2.03	NW
		4	Government Middle School Kopedeeh	2.41	SSW
		5	Govt Pronnat Primary School Mahmara	4.18	ESE
		6	Middle School, Mangata	2.47	NW
		7	Vishwadeep Senior Secondary School	9.63	ENE
		8	Seth R.C.S Arts & Commerce College Durg	8.95	ENE
		9	Bharti College of Engineering & Technology	6.98	ESE
		10	College of Veterinary Science and Animal Husbandry	3.74	ESE
		11	Maitri College of Dentistry and Research Center	2.84	SE
		12	CSIT Durg	7.02	ESE
		13	Maitri College of Dentistry And Research Center	2.85	SE
		14	Bharti Vishwavidyalaya (Main Campus)	8.25	SE
		15	Livelihood College Rajnandgaon	7.30	SSW
		16	Primary School, Tumdi Lewa	8.72	WSW
		17	UPU Government Polytechnic Durg	9.36	ENE
	Community Places				
		Sr. No.	Name	Distance (Km)	Direction
		1	Multiactivity Center DOM	4.52	WSW
	Seismic zone	Zone II (Least Active Zone)			

2.0 PROJECT DESCRIPTION

2.1 PROCESS DESCRIPTION

2.1.1 Manufacturing process of Sponge Iron (DRI)

- Iron ore, coal, dolomite/limestone is fed in the weighed quantity and the kiln is rotated at 0.5 RPM speed. A temperature between 1000 °C to 1050 °C is maintained in about 70% of the kiln length towards discharge end side for required reaction.

- After the reaction, the product is taken into an indirect cooling drum cooler. The product is cooled to 100 °C and taken for product separation and then taken for final use.
- The kiln has three functions; heat exchange, chemical reaction in vessel and conveying solids.

2.1.2 Manufacturing process of Ferro Alloys Plant

- High Carbon Ferro/ Silico Manganese and other Ferro Alloys like Ferro Silicon; Ferro Manganese as a finished product will be produced through a conventional submerged arc electric furnace having Soderberg electrodes. The furnace hood will be having fourth hole for exhaust of flue gases to be treated through APCEs.
- Pig Iron is also proposed to be produced alternately from the same submerged arc furnace by using lower grades Iron ore and Magnetite Iron ores and the Pig Iron will be sold to Induction Furnaces for production of steel.

2.1.3 WHRB based Power Generation

- The Waste heat Recovery boilers are attached with DRI Kiln. The flue gases released from DRI Kilns will be passed through Waste Heat Recovery Boiler, where waste heat will be recovered and steam will be generated in required temperature and pressure. The source of energy is the heat content in waste flue gases released from DRI Kilns.

2.1.4 AFBC Based Power Generation

- In an AFBC boiler, the fluidized bed media, which consists of ash, sand, limestone and other such materials is heated to the ignition temperature of the fuel.
- Fuel, such as char, is continuously supplied to the bed as it burns very quickly in the high bed temperatures of almost 1000°C.
- The heat generated from this combustion is used to produce steam which, like in WHRB systems, will produce power through a steam generator.

2.1.5 Process of brick making from waste

- To make Fly ash bricks Fly ash, Lime, Sand and Gypsum along with slag from the induction and arc furnaces are fed into a pan mixer, where water is added in the appropriate proportion before mixing it all together.
- After mixing; the mixture is shifted to hydraulic presses for where the mixture is given its brick like shape.
- The molded bricks are then carried into the open area where they are air dried and cured in an autoclave to give them its rigidity.

2.2 LAND REQUIREMENT

The total land area is 12.635 Ha. out of which 11.417 Ha. land having Kh. No. 1158, 1160, 1141/1, 1141/2, 1141/4, 1141/5, 1144/1, 1145/1, 1145/2, 1145/3, 1145/4, 1145/5, 1146/1, 1146/2, 1147/2, 1157/2, 1161/1,2, 1162/1, 1162/2, 1162/3, 1162/4, 1162/5, 1162/6, 1162/7, 1163/2, 1163/3, 1164/1, 1164/2, 1165/1, 1167/1, 1167/2, 1167/3, 1167/4, 1167/5, 1167/6, 1167/7, 1167/8, 1167/9, 1167/10, 1167/11, 1167/12, 1168/1, 1168/2 (area 11.417 Ha.) is already purchased and diverted for industrial use. Whereas, 1.218 Ha. Govt land under process of allotment having Kh. No. 1169/1, 1169/2, 1366, 1159 and 1142 at Village – Joratarai, Tahsil and District – Rajnandgaon (CG – 491441).

Present Status of Land: The total land area is 12.635 Ha. out of which 11.417 Ha. (more than 90%) land is already purchased and diverted for industrial use. Whereas, remaining 1.218 Ha. (Less than 10% area) which is owned by Revenue Department of the State Government has been applied for allotment on long term lease. The land will be allotted shortly by Industries Department through CSIDC from State Government. The company has involved transfer of land from “Revenue Department” to Industries Department” and then allotment to the company through CSIDC. Green belt will be developed in 4.30 Ha. (i.e. 34%). The existing land is sufficient flat land free from major undulations is available for construction, part of the land is having stunted and crooked Babool vegetation.

The detail of land use planning in the project area is provided as follows:

TABLE 3: AREA STATEMENT

Land Use	Area (In Hectare)	In %
Built-up area	1.827	14%
Road and Paved area	1.059	8%
Parking	0.225	2%
Reservoir	0.347	3%
Storage	0.453	4%
Green Belt area	4.300	34%
Open Area	4.424	35%
TOTAL AREA	12.635	100%

2.3 RAW MATERIALS REQUIREMENT, SOURCE & MODE OF TRANSPORT

The raw material will be transported through rail and truck. Coal from SECL, Iron Ore from Odisha Iron Ore Mine and from NMDC, will be transported through rail upto nearest railway siding at Rasmada and thereby transported to site through covered truck.

Availability of raw material is abundant within 600 km area. Fuel consumption will be mainly source from local sources. Iron Ore can also be procured from NMDC and Odisha Mines through bidding. Coal is also allowed to be imported [SECL Mines (200 KM)]. Bulk Material like Iron Ore; Coal Manganese Ore etc. are proposed to be brought by Rail up to nearest railway siding at Rasmada Station. From there will be transported by covered truck through road to the plant. Whereas the other raw material required for the project is Lime stone/Dolomite/ Quarts, CI/ Pig Iron Heavy Scrap; Ferro Alloys are readily available within 100 km -500 km radius and these will be transported through covered trucks.

2.3.1 Solid and Hazardous waste generation

The details of solid and hazardous waste generations are given in **Table 4** and **5**, respectively.

TABLE 4: SOLID WASTE GENERATION AND ITS DISPOSAL

Name of Waste generated	Qty. (TPA)	Proposed Disposal Plan
Char / Dolochar (SID)	57750	Captive consumption in Captive Power plant
Bottom Flue Dust Ash (SID)	46200	Used for Road making and Land filing.
Kiln Accretion and Refractory waste	400	Used for Road making and Land filing/ Refractory waste like Silica lining will be sold to the authorized refractory recycling units
Fluidized Bed Material (PP)	150	Used in own Fly Ash Brick making unit

Name of Waste generated	Qty. (TPA)	Proposed Disposal Plan
Fly Ash from Char / Dolochar (PP)	43312	Captive use in own Fly Ash Brick unit
Ash From Coal (PP)	13539	Sold to nearby Cement plants.
Slag from manufacturing of SiMn thru SAF; and/or	51000	Will be used for Road making and land fill
Slag from manufacturing of FeMn thru SAF and/or	31360	Use for Silico Manganese production in own unit or sold to other Silico Manganese production unit.
Slag from manufacturing of FeSi thru SAF and/or	1680	Will be used for Road making and land fill
Slag from manufacturing of Pig Iron thru SAF	20400	Will be used for Road making and land fill

TABLE 5: HAZARDOUS WASTE GENERATION AND DISPOSAL ESTIMATES

Type of Hazardous Waste	H.W Category /Rule	Quantity	Disposal
Waste Oil/Used Oil	5.1(as per HWM Schedule I)	4 KL/Annum	Will be given to authorized recycler having
Oil Soaked Cotton/jute	Sch. I (5.2)	2 TPA	Safely collected and stored and shall be disposed through authorized recycler.
ETP Lime Sludge	35.3	470 TPA	Given to Cement Plants or used in Brick making. The sludge will not have any Toxic Chemicals. Mostly it will be composed of Calcium; Magnesium; Silica Hardness Salts and Iron Oxide.
STP Sludge		32 TPA	Used for Composting and then applied for Green Belt.
Used Lead Acid batteries	Covered under The Batteries (Management and Handling) Rules, 2001	0.5 TPA	The lead acid battery or dry battery will be given to authorized recycler having authorization from competent Authority.
E-waste generation (Computers, laptops, Monitors, printers, and other electronic appliances)	E-waste Management rule 2022	0.5 TPA	Shall be disposed through authorized recyclers as per e-waste Management rule 2022

2.4 WATER REQUIREMENT & SOURCE

Total Yearly water requirement will be 1196KLD * 330 days = 394,680 KLA. which will be sourced from ground water. Area falls under Semi Critical as per CGWA guideline, and we propose ground water as source of water.

Further, the management had decided to implement a 25,000 KL Rain water collection Tank which will be able to collect sufficient rain water during rainy days which would continuously be collecting rain water during the rainy days which extends to almost 75 days. Thus water requirement will be met through rain water collections from it for 75 days. The balance water after the rain days will be sufficient to cater water requirement of 20 days. Therefore, it is considered that about 95 days (113,620 KL) water requirement will be met through rain water and rain water collection. Therefore, the net requirement from ground water per annum will be about 281,060 KLA.

However, we are seeking permission for the gross quantity i.e. 3,59,700 KLA

2.5 POWER REQUIREMENT & SUPPLY

Total power requirement will be 31 MW out of which 25 MW will be met through captive power plant and 6 MW will be sourced through State Grid (CSPDCL) In addition to this total 3300 kVA DG sets are proposed for emergency backup.

2.6 MANPOWER REQUIREMENT

M/s. SDRM Metaliks Pvt. Ltd. will provide employment to 492 peoples as direct employment which includes 40 people as administrative staff and 452 people will be production staff. Preference will be given to localpeople, depending upon their qualification and skill.

2.7 FIRE FIGHTING FACILITIES

In order to combat any occurrence of fire in plant premises, a central firefighting facility is proposed which will have access to various units of the plant. In addition to this, all plant units, office buildings, laboratories, etc. will be provided with adequate number of portable fire extinguishers to be used as first aid fire appliances.

2.8 PROJECT COST

The project cost of the project is estimated as Rs. 19,575.00 Lakhs.

3.0 EXISTING ENVIRONMENTAL SCENARIO

3.1 BASELINE ENVIRONMENTAL STUDIES

Baseline environmental studies were conducted at project site along with 10 km radial distance from the project site. The baseline environmental quality data for various components of environment, viz. Air, Noise, Water, Land were monitored during winter season (1st December 2023 – 29th February 2024).

3.2 METEOROLOGY & AMBIENT AIR QUALITY

Summary of the Meteorological Data Generated at Site (1st December 2023 – 29th February 2024)

First Predominant Wind Direction	E (23.08%)
Second Predominant Wind Direction	ENE (18.68%)
Calm conditions (%)	1.14
Avg. Wind Speed (m/s)	2.33

The status of ambient air quality within the study area was monitored for winter Season of the year 2023-24 at 9 locations. All these 9 sampling locations were selected based on the meteorological conditions considering upwind and downwind, cross wind directions and reference point. The levels of Respirable Particulate Matter (PM₁₀), Fine Particulates (PM_{2.5}), Sulphur Dioxide (SO₂), Oxides of Nitrogen (NO_x) and carbon monoxide (CO), Ammonia, Ozone, Benzene and BAP were monitored. The details of Ambient Air Quality Monitoring Results are summarized and given in **Table 6**.

**TABLE 6: SUMMARY OF AMBIENT AIR QUALITY RESULTS
(PERIOD – 1ST DECEMBER 2023 – 29TH FEBRUARY 2024)**

Sr. No.	Location		PM ₁₀	PM _{2.5}	SO ₂	NO ₂	CO	Ozone	NH ₃
			µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	µg/m ³
1.	Project Site	Min	58.7	22.8	8.2	15.3	0.311	6.4	5.8
		Max	74.3	30.5	11.4	20.8	0.405	9.7	8.9

Sr. No.	Location		PM ₁₀	PM _{2.5}	SO ₂	NO ₂	CO	Ozone	NH ₃	
			µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	µg/m ³	
		Avg	67.1	26.2	9.4	17.5	0.353	8.1	7.3	
		98 th	73.8	30.2	11.1	20.2	0.399	9.5	8.8	
		Min	53.6	20.3	6.2	11.8	0.209	6.2	5.4	
		Max	72.5	30.1	9.4	18.2	0.264	10.9	8.2	
2.	Magarlota	Avg	62.4	24.2	7.5	14.6	0.241	8.5	6.6	
		98 th	71.3	28.7	9.2	17.8	0.263	10.6	7.9	
		Min	56.5	20.6	7.2	13.5	0.229	6.5	5.6	
		Max	76.8	30.5	10.1	18.7	0.316	9.7	8.8	
3.	Phuljhar	Avg	65.3	25.7	8.3	15.8	0.275	8.3	6.9	
		98 th	75.9	30.4	10	18.5	0.314	9.6	8.6	
		Min	60.3	22.6	7.8	12.6	0.266	5.2	4.4	
		Max	75.4	33.8	10.3	19.1	0.412	8.5	7.1	
4.	Birejhar	Avg	69.2	27.2	9.1	16.2	0.326	6.8	5.8	
		98 th	75.3	32.6	10.2	18.8	0.392	8.3	7	
		Min	64.1	24.6	8.3	16.2	0.343	6.7	5.9	
		Max	82.4	38.2	12.8	23.7	0.518	12.1	9.7	
5.	Rasmara	Avg	73.4	32.3	10.2	19.6	0.428	9.5	8.1	
		98 th	81.7	37.8	12.3	23.3	0.506	11.9	9.6	
		Min	61.4	24.2	8.1	14.7	0.316	6.4	5.2	
		Max	80.5	37.6	11.6	21.6	0.475	10.7	9.6	
6.	Siloda	Avg	70.5	30.2	9.7	18.1	0.386	9.2	7.8	
		98 th	78.7	36.5	11.2	21.2	0.458	10.7	9.6	
		Min	61.4	23.1	6.5	14.2	0.225	4.9	4.7	
		Max	78.2	34.2	10.5	18.8	0.482	9.5	8.6	
7.	Khapri	Avg	68.3	28.3	8.9	16.7	0.323	7.2	6.4	
		98 th	76.9	33.7	10.4	18.8	0.479	9.5	8.4	
		Min	53.2	19.7	6.7	12.5	0.226	5.4	4.2	
		Max	72.6	28.5	8.7	18.3	0.288	8.1	7.5	
8.	Jortarai	Avg	63.5	23.8	7.8	15.2	0.254	6.6	5.5	
		98 th	70.8	27.8	8.7	17.9	0.283	8.0	7.3	
		Min	58.5	23.2	8.7	18.4	0.341	6.3	5.6	
		Max	74.6	37.8	12.9	26.1	0.462	9.2	8.4	
9.	Anjora	Avg	66.1	30.2	10.5	21.4	0.392	7.8	6.9	
		98 th	73.2	37.1	12.6	25.6	0.457	9.1	8.3	
		CPCB Standards		100	60	80	80	2	100	400
				(24hr)	(24hr)	(24hr)	(24hr)	(8hrs)	(8hr)	(24hr)

3.3 AMBIENT NOISE LEVELS

Ambient noise level monitoring was carried out at the 08 monitoring locations; those were selected for ambient air quality monitoring. The monitoring results are summarized in **Table 7**.

TABLE 7: AVERAGE NOISE LEVELS IN THE STUDY AREA

Sr. No.	Monitoring locations	1 st December 2023 – 29 th February 2024	
		Leq _{Day}	Leq _{Night}
Residential Area			
1.	Birejhar	52.4	41.7
2.	Kopedih	53.2	42.5
CPCB Standards dB(A)		55.0	45.0
Commercial Area			

Sr. No.	Monitoring locations	1 st December 2023 – 29 th February 2024	
3.	Siloda	62.7	51.6
4.	Jortarai	51.6	42.8
CPCB Standards dB(A)		65.0	55.0
Silent Zone			
5.	Khapri	47.6	38.1
6.	Magarlota	48.1	38.7
CPCB Standards dB(A)		50.0	40.0
Industrial Area			
7.	Project Site	56.4	48.2
8.	Rasmada Industrial Area	68.2	57.3
CPCB Standards dB(A)		75.0	70.0

Source: Field monitoring and analysis by Anacon Laboratories Pvt. Ltd., Nagpur

3.4 SURFACE AND GROUND WATER RESOURCES & QUALITY

3.4.1 Regional Geology

Site Specific Geology

Geologically the study area is mainly covered by rocks of Meso to Neo Proterozoic age. The major rock type found in and around the study area are stromatolitic dolomitic limestones. Though few appearances of sandstones and laterites are noticed in the study area. The rocks of study area is represented by Chandi Formation belonging to Raipur Group of Chhattisgarh Super Group.

Geomorphology

The study area is gently undulating, and pediplains are the most prominent geomorphic units. Physiographically the area district having plains belonging to Chhattisgarh basinal area and the general slope is towards the north-west. Active flood plains and abandoned channels are concentrated mainly in the eastern part of the study area. Other significant geomorphic features area cut-off meanders, point bars and lateric uplands.

The study area is drained by the Shivrath river and its distributaries. Drainage pattern of the area is dendritic to sub-dendritic in nature.

3.4.2 Hydrogeology and Aquifer Systems

The occurrence of groundwater and its distribution in space are highly influenced by the underlying geological formations and hydrogeological characteristics of the surroundings. The porous, weathered, jointed, and fractured zones present in the rocks or formation provide scope for groundwater occurrence, storage, and movement. The hydrogeology of the area broadly describes the disposition of water-bearing formations, occurrence of groundwater and its yield potential, groundwater regime conditions, depth to water levels in different seasons, etc.

The main rock type consists of arenaceous-argillaceous-calcareous rocks and is dominated by limestone/ dolomite and sandstones. The ground water in these formations occurs under semi-confined and confined conditions. The weathered, cavernous and fractured part of the formation constitutes the aquifers in the area.

The Pre-Monsoon depth to water Level 5 to 20 mbgl is observed in the study area and Post-Monsoon depth to water Level 3 to 6 mbgl is observed in major parts of the area. The Total Dissolved Hardness (TDS) of the water is 370-400 as measured, the pH of the water is 7.05 and the Electric Conductivity is 600-700 μ s/cm. As per CGWA Categorization of Assessment Units as per Dynamic Ground Water Resources of India the area comes under Semi-Critical category.

3.4.2 Water Quality

Groundwater and surface water quality was assessed by identifying 8 groundwater (Borewell/handpump) locations in different villages and 5 surface water samples.

A. Groundwater Quality

The analysis results indicate that the pH ranged 6.94 – 7.61. The TDS was ranging from 303 – 392 mg/l. Total hardness was found to be in the range of 128.53 – 224.69 mg/l. The fluoride concentration was found to be in the range of 0.35 – 0.88 mg/l. The nitrate and sulphate were found in the range of 4.21 – 7.12 mg/l and 16.98 – 46.68 mg/l respectively. The chloride concentration was found in the range of 72.87 to 101.87 mg/l. The Total suspended solid concentration was found below detection limit (DL -10mg/l) at all sampling location. Heavy metals like As, Pb, Ni was found below detection limit i.e. BDL (DL-0.01), BDL (DL-0.001), BDL (DL-0.01) respectively and Iron was found in the range of 0.11 to 0.21 mg/l.

B. Surface Water Quality

The physico-chemical characteristics of the surface water samples collected and analysed are presented in **Table 3.4.3** and are compared with the IS-10500 standards. The analysis results indicate that the pH ranged between 6.91 – 8.16 which is well within the specified standard of 6.5 to 8.5. The pH of water indicates whether the water is acid or alkaline. The TDS was observed to be 310 – 394 mg/l which is within the permissible limit of 2000 mg/l. The total hardness recorded was in the range of 170.37– 288.08 mg/l as CaCO₃ which is also within the permissible limit of 600 mg/l. The levels of chloride and sulphate were found to be in the range of 65.48 – 147.56 mg/l and 21.71 – 46.31 mg/l respectively.

Dissolved oxygen (DO) refers to the amount of oxygen (O₂) dissolved in water. Because fish and other aquatic organisms cannot survive without oxygen, DO is one of the most important water quality parameters. The reported value of range of 5.4 – 6.3 mg/l. Phosphorus (as PO₄) is an important nutrient for plants and algae. Because phosphorus is in short supply in most fresh waters, even a modest increase in phosphorus can cause excessive growth of plants and algae that deplete dissolved oxygen (DO) as they decompose. PO₄ concentration was found to be in the range of 0.16 – 0.42 mg/l. COD ranges from 15.32 – 36.61 mg/l and BOD ranges from 2.67 – 4.24 mg/l.

C. Bacteriological Characteristics

Coliform group of organisms are indicators of faecal contamination in water. All surface water samples were found to be bacteriologically contaminated. Presence of total coliforms in surface water indicates that a contamination pathway exists between any source of bacteria (septic system, animal waste, etc.) and the surface water stream. A defective well can often be the cause when coliform bacteria are found in well water. For surface water, treatment followed by chlorination or disinfection treatment is needed before use for domestic purpose. Groundwater samples were not found to be bacteriologically contaminated.

LOCATION WISE WATER QUALITY ASSESSMENT

S. N.	Locations	WQI	Quality	Remark
1.	Project Site	46.91	Excellent	Assessment of water quality based on the above physico-chemical parameters has found that the quality of groundwater samples ranges from excellent to good.
2.	Magarlota	52.98	Good	
3.	Birejhar	51.83	Good	
4.	Rasmara	54.54	Good	
5.	Siloda	60.31	Good	
6.	Khapri	53.21	Good	
7.	Jortarai	49.25	Excellent	
8.	Anjora	51.38	Good	

3.5 LAND USE LAND COVER CLASSIFICATION

The land-use & land cover map of the 10 km radial study area from the periphery of project site has been prepared using Resource SAT-1 (IRS-P6), sensor-LISS-3 having 23.5m spatial resolution and date of pass 28th March 2024 satellite image with reference to Google Earth data. In order to strengthen the baseline information on existing land use pattern, the following data covering 10 km radius is approximate about 21° 5'1.48"N to 21°16'12.47"N latitude and 81° 5'47.39"E to 81°17'50.84"E longitude and elevation 271 to 351 meters are used as per the project site confined within that area.

The Land Cover classes and their coverage are summarized in **Table 8**.

TABLE 8: LU/LC AND ITS COVERAGE WITHIN 10 KM RADIUS

LU/LC Classification System				
S. No.	Level-I	Level-II	Area (Sq. Km ²)	Percentage (%)
1	Built-up land	Settlement	16.66	4.85
		Industrial Settlement	7.33	2.13
		Road Infrastructure	4.68	1.36
		Railway Line	1.64	0.48
2	Agricultural Land/ Crop Land	Single Crop	184.82	53.82
		Double Crop	71.35	20.78
3	Forest Area	Reserved Forest	3.75	1.09
4	Scrubs/Wastelands	Open Scrub	25.57	7.45
		Wasteland	3.98	1.16
5	Waterbodies	River/Nala/Stream/Canal	8.59	2.50
		Dam/Pond/Lake	15.02	4.37
		Total	343.39	100

3.6 SOIL QUALITY

The project site and its terrain consist of flat to moderately steep slopes. The terrain is characterized by forest, agricultural land, land, various settlements, water body and open scrub/wasteland. It is also observed that the open scrub area and barren land are dominant in North West and Middle Portion of the study area. The following observations from the Soil Quality reports are as follows:

Parameters	Unit	Results	Fertility Status
pH	-	6.34 – 6.93	Slightly acidic to Neutral
Organic Carbon	%	0.64 – 1.08	Average to more than sufficient
Nitrogen	Kg/hect	198.4 – 363.67	Better
Phosphorus	Kg/hect	35.32 – 64.54	Less to medium
Potassium	Kg/hect	117.45 – 290.65	Veryless to medium
Sodium Absorption Ratio	-	0.68 – 1.16	Excellent (Little or No Hazard)

3.7 BIOLOGICAL ENVIRONMENT

Floral composition in Study Area:

Total 111 plant species were enlisted within the study site out of which habitat wise details are given as follows: Trees: 62, Shrubs: 23, Herbs: 13, Climbers: 5, Grasses & Bamboos: 7, and Parasite: 1 species observed in the study area.

Endemic Plants of the Study Area

Among recorded plant species none were assigned the status of endemic plant of this region.

RET (Rare, Endangered and Threatened species) Status

According to IUCN Status report 2023-1 out of total 111 plant species identified within study area belongs to least concern (LC), Data Deficient (DD) and Data not evaluated (NE), as per IUCN status report 2023-1.

Fauna Details:

As per IUCN RED (2023-1) List

Among the reported animals, the categorization of species as per IUCN is as follows:

Among Mammals: Jackal (*Canis aureus*), Common Mongoose (*Herpestes edwardsi*) and Indian fox (*Vulpes bengalensis*) are protected in Schedule-I, Common Langur (*Semnopithecus entellus*) and Black-naped hare (*Lepus nigricollis*) are protected in Schedule-II. Whereas, Palm squirrel (*Funambulus pinnati*) and Rats does not protected in Schedule of Wild Life Protection Amendment Act 2022.

Among the Herpetofauna: Among the Herpetofauna, Indian Cobra (*Naja naja*), and Common Rat Snake (*Ptyas mucosa*) were provided protection as per Schedule-I of Wild life (protection) Amendment act, 2022 and Common Indian Krait (*Bungarus caeruleus*), Indian Toad (*Bufo parietalis*) were provided as per Schedule – II of Wild life (protection) Amendment act, 2022 and as amended.

Avifauna: All birds were observed in the study are included in Schedule-II as per wildlife protection act.

A thick green belt around the periphery of plant site is recommended to provide safeguard for surrounding area in line with project activities.

3.8 SOCIO-ECONOMIC ENVIRONMENT

Information on socio-demographic status and the trends of the communities in the 10 km radius was collected through primary social survey and secondary data collection from census 2011, District Census hand book 2011 & GeolQ 2020. Summary of the socio-economic status of the study area is given in **Table 9**. Details regarding education and infrastructure facilities 2011 are presented in **Table 10**.

TABLE 9 (A): SUMMARY OF SOCIO-ECONOMIC ENVIRONMENT OF VILLAGES WITHIN STUDY AREA

Total households	30105
Total population	142930
Male Population	72110
Female population	70820
SC Population	19318
ST Population	11080
Total literates	94822
Total Illiterates	48108
Total workers	69127
Total main workers	54818
Total marginal workers	14309
Total non-workers	73803

Source: Primary census abstract 2011, District Rajnandgaon & Durg State Chhattisgarh

TABLE 9 (B): PREDICTED POPULATION DETAILS IN STUDY AREA (2020)

Zones	Total Population	Total Male	Total Female
0-2 km	5072	2598	2474
2-5km	40960	20956	20004
5-10km	126525	64133	62399
10 km	172557	87687	84877
In %		50.82	49.19

Source: GeoIQ website (<https://geoiq.io/places/Chhattisgarh/zibvqpcXAF>)

TABLE 10: PERCENTAGE DETAILS REGARDING INFRASTRUCTURE FACILITIES WITHIN 10 KM RADIUS STUDY AREA

Infrastructure facilities	Availability (In percentage) As per year 2011, Census Dist Rajnandgaon & Durg Chhattisgarh
Educational Facilities	100
Drinking water	100
Road	98.64
Power	100
Communication	90.54
Transportation	94.59
Govt. PHC & SC	45.95
Bank & Society	14.86
Drainage	50
Recreation	14.86

Source: Primary census abstract 2011, District Rajnandgaon & Durg State Chhattisgarh

SALIENT OBSERVATION OF THE SOCIO-ECONOMIC SURVEY

A number of aspects were studied in the villages surveyed for socio- economic studies. Following are the observations found during interviews, focused group discussions and as per the Questionnaire.

Livelihoods

Agriculture (Cultivation, Farming)

Agriculture is the predominant occupation in the study area. The primary crops grown are paddy, wheat, maize, pulses, and various vegetables. Paddy is the most widely cultivated crop, benefiting from the region's monsoon climate. Wheat is grown during the Rabi season, while maize is a significant Kharif crop. Pulses such as pigeon pea, gram, and lentils are also cultivated, contributing to the dietary needs and economic stability of the community. Additionally, vegetables like tomatoes, brinjals, and okra are commonly grown, supporting both local consumption and market supply.

Agriculture Labor and Wage Rates

Agricultural labor forms a substantial part of the local workforce. Wage rates for agricultural labor vary seasonally, with higher rates during peak sowing and harvesting periods. On average, daily wage rates range between ₹200 to ₹300 for men and ₹150 to ₹250 for women. The demand for labor peaks during the monsoon and winter seasons, aligning with the primary agricultural cycles. The variability in wages reflects the dependency of the local economy on agricultural productivity.

Agricultural Production & Marketing

Agricultural production in the area is largely subsistence-based, with a portion of the produce sold in local markets. Farmers often rely on traditional farming methods, though some have adopted modern techniques to improve yield. Marketing infrastructure includes local mandis (markets) and cooperatives that facilitate the sale of agricultural products. The introduction of better storage facilities and market linkages could significantly benefit farmers, reducing post-harvest losses and improving income stability.

Skilled and Unskilled Labor

The region has a mix of skilled and unskilled labor. Skilled labor primarily includes individuals with expertise in farming techniques, machinery operation, and agro-based small-scale industries. Unskilled labor encompasses a larger portion of the population engaged in manual farming activities, construction, and other non-specialized jobs. Training programs and skill development initiatives could enhance the capabilities of the local workforce, aligning with the demands of the proposed steel plant.

Animal Herding Including Livestock Farming

Livestock farming is an integral part of the rural economy. Common livestock includes cattle, goats, poultry, and buffaloes. Livestock provides supplementary income through the sale of milk, meat, and other by-products. Additionally, animals are used for plowing fields and transportation. Veterinary services and better breeding practices could enhance livestock productivity, contributing to the overall economic well-being of the community.

Economic Benefits

The proposed steel plant project is expected to bring substantial economic benefits to the region. It will create direct employment opportunities in construction, operations, and maintenance. Indirect employment will arise from increased demand for local goods and services. The inflow of capital and improvement in infrastructure will stimulate economic activities, fostering development and raising the standard of living for the local population.

Population Density

The area within a 10 km radius of the proposed project site has a moderate population density. Villages are typically small to medium-sized, with populations ranging from a few hundred to a few thousand residents. The introduction of the steel plant is likely to attract more people to the area, potentially increasing the population density. This influx could lead to a greater demand for housing, education, healthcare, and other essential services.

Culture

The cultural fabric of the study area is rich and diverse, with a blend of tribal and non-tribal communities. Traditional festivals, fairs, and rituals are integral to the social life of the inhabitants. Cultural practices are deeply rooted in the agrarian lifestyle, with celebrations often linked to agricultural cycles. The proposed project could introduce new cultural dynamics as people from different regions might migrate for work, enriching the local culture but also posing challenges in maintaining cultural cohesion.

Health Care

Healthcare facilities in the study area are basic, with primary health centers and sub-centers providing essential medical services. There are few private clinics, and for specialized treatments, residents often travel to larger towns or cities. The project could improve healthcare infrastructure by facilitating the establishment of better medical facilities and services, ensuring the well-being of the local population.

Social Well-being

The social well-being of the community is closely tied to economic stability and access to basic services. The project has the potential to enhance social well-being by creating jobs, improving infrastructure, and providing better educational and healthcare facilities. However, it is essential to manage the social changes carefully to ensure that the benefits are equitably distributed and that any adverse impacts are mitigated.

Education

Educational facilities in the area include primary and secondary schools, with a few higher secondary schools and colleges in nearby towns. The literacy rate is improving, but there is still a need for more educational institutions and quality teaching staff. The steel plant project could contribute to the development of educational infrastructure, including the establishment of schools and vocational training centers, thereby enhancing the skill levels of the local population.

Infrastructure Building

The proposed project will necessitate significant infrastructure development, including roads, bridges, and utilities. Improved infrastructure will facilitate better connectivity and access to markets, healthcare, and education. The development will not only support the project but also benefit the local community by improving overall living conditions.

Afforestation

Afforestation efforts are crucial in maintaining ecological balance and mitigating the environmental impact of the project. The project should include a comprehensive afforestation plan to restore green cover, enhance biodiversity, and provide ecological benefits such as soil conservation and carbon sequestration. Community involvement in these efforts can ensure their success and sustainability.

Rural Water Supply

Access to clean water is a critical issue in the study area. The project must address the water needs of both the plant and the local community. Initiatives to improve rural water supply, such as the construction of borewells, rainwater harvesting systems, and water treatment facilities, are essential. Ensuring a sustainable water supply will enhance the quality of life and support agricultural activities.

Migration from Other States

The project is likely to attract a workforce from other states, leading to migration into the area. This influx can bring diverse skills and cultural influences but may also strain existing resources and infrastructure. Proper planning and integration strategies are necessary to manage the impact of migration on housing, healthcare, education, and social services.

Sanitation

Sanitation facilities in the study area need improvement. The project should include measures to enhance sanitation infrastructure, such as the construction of toilets, waste management systems, and drainage facilities. Improved sanitation will contribute to better health outcomes and overall quality of life for the residents.

Road Connectivity

The existing road network in the area is basic, with some roads in poor condition. The project will require upgrading and constructing new roads to facilitate transportation of raw materials and finished products. Improved road connectivity will benefit the local community by providing better access to markets, healthcare, and educational institutions.

Electricity

Electricity supply in the study area is relatively stable, but there are occasional outages. The project will require a reliable power supply, which can also benefit the local population. Investments in power infrastructure, including substations and transmission lines, will ensure a steady electricity supply for both the plant and the community.

Banking Facility

Access to banking facilities is limited in the study area, with only a few branches of nationalized banks and cooperative societies. The project can stimulate financial inclusion by encouraging the establishment of more banking services. This will facilitate economic transactions, savings, and access to credit for local businesses and individuals.

Transportation

Public transportation options in the area are limited, with most residents relying on bicycles, motorcycles, and shared auto-rickshaws. The project could improve transportation infrastructure and services, making it easier for people to commute to work and access essential services. Enhanced transportation will also support the movement of goods, boosting local trade and commerce.

Providing Services in Transport and Other Available Services

With the advent of the steel plant, there will be increased demand for transport services and other ancillary services such as catering, maintenance, and security. Local entrepreneurs can be encouraged to establish service businesses, creating additional employment opportunities.

Fetching and Carrying

Fetching water and carrying goods are common activities, especially for women and children. Improved infrastructure, such as better water supply systems and transportation services, can reduce the burden of these tasks, freeing up time for education and other productive activities.

3.8.1 Awareness and opinion of the respondents about the project

In the context of promoting human development in the changing social landscape, effective communication holds a key role. To capture the diverse perspectives of individuals and communities regarding a specific project, the practice of conducting awareness cum public discussions becomes imperative. This process not only encourages individuals to voice their thoughts but also addresses their concerns and misconceptions through informed counseling.

Observations in the villagers:

- In the core zone villages, the majority of the local population is already well-informed about the project, as per primary survey results.
- Respondents in these areas possess an understanding of both the project's advantages and disadvantages and exhibit curiosity regarding its broader benefits.
- Local leaders show a keen interest in gaining insights into the project's potential for employment generation, overall development, and social advantages.

The primary demands expressed by villagers in the study area revolve around essential aspects of community well-being, which are as follows:

Drainage Network: This network aims to efficiently manage storm water and domestic wastewater, comprising lined drains covered with RCC slabs. These drains will run parallel to internal village roads, ultimately leading to a collection tank. The treated water can be utilized for irrigation or groundwater recharge.

Sanitation Network: Designed for transporting domestic waste, this network also handles waste from schools, healthcare facilities, and other complexes within resettlement sites. Sewage treatment through septic tanks is planned, with the treated sewage disposed of in absorption trenches.

Safe Drinking Water: Underground drinking water pipelines along internal village roads are proposed to ensure access to safe drinking water. The consideration of constructing a conventional water treatment plant is also on the agenda.

Public Transport: Initiatives to improve public transportation, including the expansion of bus stops, are being considered.

Cremation Grounds: Provision for proper cremation grounds to cater to cultural and spiritual needs.

Fair Price Shops and Other Retail Outlets: Ensuring access to essential goods and services for the convenience of residents.

Drinking Water Troughs for Cattle: For families engaged in livestock rearing, the construction of drinking water troughs is proposed, promoting animal welfare.

3.8.2 Interpretation

In conclusion, the socio-economic study highlights the transformative potential of the proposed steel plant project in Village Joratarai and its surrounding areas. While the project promises to generate

employment, improve infrastructure, and stimulate economic activities, it also necessitates careful planning and management to mitigate potential adverse impacts on the environment and local communities. By integrating community feedback, implementing robust mitigation measures, and fostering inclusive development initiatives, the project can strive towards fostering sustainable socio-economic growth that benefits all stakeholders. This holistic approach is crucial for ensuring that the project aligns with local needs and aspirations, thereby fostering long-term socio-economic resilience and prosperity in the region.

4.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.1 AIR ENVIRONMENT

The mathematical Model AERMOD was used for predicting the GLCs, which is entirely in line with the requirement of Central Pollution Control Board, New Delhi. In 1991, the U.S. Environmental Protection Agency (EPA) in conjunction with the American Meteorological Society (AMS) formed the AERMOD. AERMOD is a steady-state plume model aimed at short-range (up to 50 km) dispersion from stationary industrial-type sources.

The impact of a source or group of sources on air quality is evaluated using mathematical models. The widely accepted interpretation models simulate the relationships between air pollutant emissions and its impact on air quality. For the present study, this model is used for the prediction of maximum ground level concentrations.

Presentation of Results

The model simulations are done for the air pollutants due to proposed project. The maximum ground level concentrations (GLCs) for particulate matter and gaseous emission of SO₂, NO_x due to proposed project has been carried out using hourly meteorological data. The short-term modelling results are presented in **Table 11** and for the short-term simulations for point emission sources, the concentrations were estimated around 441 receptors to obtain an optimum description of variations in concentrations over the site in 10 km radius covering 16 directions. The predicted incremental concentrations of above parameters are as follows:

TABLE 11: PREDICTED INCREMENTAL GROUND LEVEL CONCENTRATIONS

Pollutant	Concentration due to proposed activities ($\mu\text{g}/\text{m}^3$)	Distance (m)	Direction
Particulate Matter (PM ₁₀)	2.20	450	W
Particulate Matter (PM _{2.5})	0.71		
SO ₂	8.35	500	
NO _x	8.35		

TABLE 12: DETAILS OF AIR POLLUTION CONTROL SYSTEM/ MITIGATION MEASURES

S. No.	Facilities	Air Pollution Control equipment	Emission Level
1	DRI Kiln with WHRB's	<ul style="list-style-type: none"> Dust extraction system, 4 field Electro Static Precipitators (ESP) with a Chimney (Ht. 82 M) Bag Filters for Product house; Kiln discharge end and transfer points. 	PM <30 mg/Nm ³
2	AFBC Boiler	<ul style="list-style-type: none"> 4 Field Electro Static Precipitators (ESP) with a Chimney (Ht. 42 M) and Bag Filters at Coal conveyors 	PM <30 mg/Nm ³
		<ul style="list-style-type: none"> Lime Dosing 	SO _x <100 mg/Nm ³
		<ul style="list-style-type: none"> Low NO_x burners with 3-stage combustion, flue gas recirculation and auto combustion control 	NO _x <100 mg/Nm ³

S. No.	Facilities	Air Pollution Control equipment	Emission Level
		system will be provided	
5	Ferro Alloys and/or Pig Iron	<ul style="list-style-type: none"> 3 Sets of Bag Filter with Chimney (52 M) 	PM <30 mg/Nm ³

Additional Measures to reduce/control pollution control

- Dust Suppression System will be installed within plant premises along internal roads.
- Water sprinkling will be carried out at approach road.
- Most of the materials will be stored under covered shed.
- In case of storage of Sponge Iron; Coal in open, it will be covered by tarpaulins to prevent spread of dust from it during transportation.
- Regular maintenance of vehicles and machineries will be carried out in order to control emissions.
- Green belt development would be taken up all along the roads, plant premises etc.
- Green belt will also be developed on the sides of approach road.
- Protective appliances will be provided to all the workers exposed in dusty atmosphere.
- Avoiding overloading of the trucks.
- Workers will be equipped with all personal protective devices like Gum Boot; hand gloves; Safety helmet; Safety goggles, earplugs at work place.
- By controlling the speed of the truck.
- Proper gradient of approach roads to reduce cumulative noise.
- Transportation of materials will be in covered truck and limited to day hours.
- Periodical maintenance of process machinery.

4.2 NOISE ENVIRONMENT

- Day and night sound pressure levels are often used to describe the community exposure. The nearest human settlement Joratarai is 1.50 KM (NW) away from project site and resultant noise level at this village are 51.6 dB(A) & 42.8 dB(A) at day night respectively.
- Full body vibration and hand-arm vibration impacts will be felt by operators sitting in heavy machineries and operating vibrating devices, respectively. Necessary precautions in workplace environment shall be exercised to reduce workplace vibration impacts.

Mitigation Measures

- Dense plantation will help to reduce noise pollution in the following ways –
 - The sounds that are produced by the leaves helps muffle the noise.
 - Hedging makes a thick front of the wall and blocks the noise.
 - Thick tree trunks create a sound-absorbing buffer zone.
 - They help in filtering the noise.
- Equipment will be standard and equipped with silencer. The equipment will be in good working conditions, properly lubricated and maintained to keep noise within permissible limits.

- Most of the equipment's will be placed in closed room
- Equipment's will be placed on acoustic floor to reduce vibration and noise
- High noise zone will be marked, and earplugs will be provided to the workmen near high noise producing equipment.
- Use of PPE's awareness program will be provided to all workers.
- Proper shifting arrangement will be made to prevent over exposure to noise and vibration.
- Silent DG sets will be used site.
- Speed limits will be enforced on vehicle.
- Regular noise & vibration monitoring will be carried for all equipment's to check compliance with prevailing rules.

4.3 IMPACT ON WATER ENVIRONMENT

The proposed implementation of the project may have some impact on the water environment. The impact may be on the source of water in the form of depletion of water resources of the area and in the form of deterioration of quality of natural water resources due to discharge of plant effluent. It is proposed that no effluent will be discharged outside the plant.

The various control measures that will be adopted are:

Mitigation Measures

- The project will have a **100 KLD ETP** including for treat Industrial waste water and **25 KLD STP** for treatment of domestic waste water. Treated Industrial water from ETP will be partly utilised in dust suppression, Fly Ash conditioning and Slag quenching and recycle in the process. Whereas, treated domestic wastewater from STP will be used in green belt. The project site is located in an area classified as '**Semi Critical**' as per the guidelines of CGWA, moreover the source of water will be surface water.
- Total 76 KLD treated water will be reused/recycled in process.
- 20 KLD treated domestic water through STP will be used green belt development.
- Garland drain will be provided to all stockyards area to prevent run-off containing suspended solids by routing the storm water drains through catch pits/sediment traps.
- Any spillage of hazardous waste (used oil/spent oil, ETP Slag, etc.) or contamination will be immediately removed.
- Periodic ground water monitoring at project site as well as nearby villages will be carried out.
- Rain water charged to ground water
- Closed circuit circulation system will be followed.

4.4 IMPACT ON BIOLOGICAL ENVIRONMENT

Ecology & Biodiversity: Aspect - Impact identification and mitigation measures suggestion for proposed Greenfield project.

Sl.	Project Aspects / Activities	Impacts	Mitigation Measures Suggested
1.	Transportation, unloading & storage of Material and Movement of vehicle inside	Impact on Reserve Forest (2.91 km) in North West direction in a scale of 2 out of 5 due to	20 M thick greenbelt will be developed towards North and North West Direction from the

Sl.	Project Aspects / Activities	Impacts	Mitigation Measures Suggested
	plant, Dust and sound generation due to proposed activities	proposed project activity.	project site.
2.	Gaseous emission from Stack, Movement of vehicle inside plant and Raw material & finished product transportation, Product manufacturing	Decline in photosynthetic activities, Stomatal index may be minimized, Crop yield will be reduced in absence of site-specific mitigation measures	Air quality modelling outputs study revealed that, the resultant concentrations of particulate matter, sulphur di-oxide and oxides of nitrogen are well within the prescribed limits. The impact due to proposed project would be minimal as project activity will be carried out within the plant boundary limit with proper control measures. Greenbelt area of 4.5 Ha. (34%) will be proposed for project with local species with broad leaves and higher canopy and fast-growing tree species. Total plants are 10750 nos. are proposed. Indigenous species for plantation is recommended
3.	Study of impact on Schedule – I animals	Schedule – I species were reported within study area.	Project activity will be confined to non-forest land. No National Park, Wildlife Sanctuary, Biosphere Reserve, Tiger Reserve, defined Migratory corridors, etc. within the 10 km radial distance from the project site. Mangata Reserved Forest - 2.91 km/NW

4.5 IMPACT ON SOCIO-ECONOMIC ENVIRONMENT

Positive Impacts

- The regularization of the steel production facility is anticipated to create additional jobs, contributing to increased employment opportunities.
- Economic activities associated with the steel project may lead to the growth of local businesses, fostering entrepreneurship.
- Project-related developments could result in enhanced infrastructure, improving the overall quality of life for residents.
- Initiatives aimed at skill development are poised to increase the employability of the local workforce.
- Small-scale entrepreneurship support is expected to contribute to the strengthening of the local economy.
- CER activities will assure the fulfillment of needs of people residing in the study area.

Negative Impacts.

- The steel plant operations will generate emissions, effluents, and solid waste, which can lead to air, water, and soil pollution. This pollution can harm local biodiversity, agriculture, and human health.
- The influx of workers and rapid industrialization may disrupt local social structures and lead to conflicts over resource use and cultural differences. It may also lead to an increase in the cost of living, affecting the local population.
- Industrial activities pose health and safety risks to both workers and local communities. Exposure to pollutants and industrial accidents can lead to serious health issues and fatalities.
- Construction and operational activities of the plant can generate significant noise, which can disturb local communities and wildlife.
- Increased transportation of raw materials and finished products can lead to traffic congestion and a higher risk of road accidents.

Mitigation Measures

In order to mitigate the adverse impact likely to arise in social, cultural and economic aspects in the surrounding region due to the proposed project and improvement in quality-of-life following mitigation measures should be adopted:

- Advanced equipment like Electrostatic Precipitators (ESP), Bag filters and Low NO_x Burners will be used to control air pollution. Effluents will be treated with Effluent Treatment Plants (ETPs) and regularly monitored for compliance. Solid waste management should focus on reducing, reusing, and recycling materials, with proper disposal of hazardous waste.
- Ensure that benefits from the project, such as employment and social programs, are distributed equitably among local residents to prevent social tensions.
- Conduct regular consultations with local communities to understand their concerns and include them in decision-making processes.
- Strict health and safety protocols will be implemented, including the use of personal protective equipment (PPE), regular safety drills, and safety training for all workers. Regular health check-ups and health awareness programs will be provided for workers and local communities to detect and address health issues early.
- Use noise barriers, maintain equipment to reduce noise, and schedule high-noise activities during daytime hours to minimize disruption.
- Develop a traffic management plan that includes designated routes for heavy vehicles, staggered timings to avoid peak hours, and coordination with local traffic authorities.

5.0 ANALYSIS OF ALTERNATIVES (SITE AND TECHNOLOGY)**5.1 SITE SELECTION**

The proposed site to establish greenfield Sponge Iron and Ferro Alloys plant with captive power plant at Village – Joratarai, Tahsil and District – Rajnandgaon, Chhattisgarh was selected after considering a number of alternative locations. A number of factors influence the feasibility of location for such projects in which availability of adequate land and access to power infrastructure and transport network and adequate water are important.

Thus the availability of logistics support; water; power; manpower; adequate land and safe distance from the habitation/human settlement area as well as back ground existing background pollution levels criteria of selecting the sites. Many locations which were offered nearer to densely populated area were primarily not considered.

Alternative sites Evaluated :The company has considered 4 alternative sites. Out of these above 4 locations 3 locations were not found suitable, it was found difficult to set up the proposed plant in the 3 alternative sites due to several reasons as explained in table above such as non-availability of adequate surface water, non-availability sufficient land in single patch or lack of willingness of Villagers to allow to set up sponge iron plant. Road and Rail connectivity was also observed to be inadequate in most of the alternative sites. The selected **site no 4** was found most suitable as also it is located in the industrial cluster of Borai Industrial growth Centre so the area was found most suitable. The previous promoters had also planned to set up the plant on this land thus the land was also diverted for industrial use on which EC was also obtained.

Thus, in view of the above study of alternative sites, Site no. 4 at Village – Joratarai, Tahsil and District – Rajnandgaon (C.G.) have been selected as it meets most of all the criteria.

5.2 SELECTION OF ALTERNATIVE TECHNOLOGY

The basic principle for selection of technology for proposed project is based on environmental applicability, technical and financial viability. Selection of suitable production process and the capacity of the production units form the nucleus around which the basic concept of a plant is developed. While the selection of a process takes into account factors like type of product, availability of local raw material, process status, specific energy consumption, level of energy required, environment, and pollution etc., the capacity selection of major units would depend on the volume of production, available unit sizes, economies of scale, etc.

6.0 ENVIRONMENTAL MONITORING PROGRAM

An Environmental Management Cell (EMC) will be established for the proposed project under the control of by General Manager (Plant Head) with a direct reporting to Board of Directors.

The company has proposed to Capital Cost of Rs. 25 Lakhs and Recurring Cost of Rs. 9.7 towards Environment Monitoring Program. NABL/MoEFCC accredited lab (Third party) will engaged to monitor all the environmental components as per CPCB/CECB norms.

7.0 ADDITIONAL STUDIES

7.1 PUBLIC CONSULTATION

The draft EIA-EMP report for greenfield project is prepared as per the ToR issued by EAC (Industry -I), MoEF&CC, New Delhi and the report is submitted for public consultation process as per the provisions of EIA Notification 2006 and amendments thereof.

After completing the public consultation process, the points raised and commitment of project proponent during the public hearing will be incorporated in the final EIA-EMP report for final submission to Environmental Clearance.

7.2 RISK ASSESSMENT & DISASTER MANAGEMENT PLAN

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

Hazard analysis involves the identification and quantification of the various hazards (unsafe conditions) that exist in the project site. On the other hand, risk analysis deals with the identification

and quantification of risks occurring due to the plant equipment and personnel exposed, due to accident resulting from the hazards in the plant. The occupational and safety hazards and preventive measures, process hazards and their preventive measures, and storage hazards and preventing measures are provided in details in Chapter 7 of the EIA report.

The main objective of the risk assessment study is to determine damage due to major hazards having damage potential to life and property and provide a scientific basis to assess safety level of the facility. The secondary objective is to identify major risk in manufacturing process, operation, occupation and provide control through assessment and also to prepare on-site, off site plans to control hazards.

The assessment of risk in the proposed project has been estimated for material handling, movement of Trucks/Tippers, Dust hazards, Hazards, shock hazards, etc. and corresponding mitigation measures are suggested in the EIA/EMP report.

8.0 PROJECT BENEFITS

Proposed Social Welfare Arrangement

- M/s. SDRM Metaliks Pvt. Ltd. will comply with its obligation for CSR as per Company's Act too.
- A provision of Rs. 300 Lakhs is made under CER.
- The project benefits also entail revenue earnings to national and state exchequer through GST (Estimated Rs. 200 Crores Gross GST), road tax, income by registration of trucks & trailers, income tax, corporate tax, etc.
- It is estimated that **Total 492** people will get direct employment and indirect employment will be **1000 persons**.
- The company is likely to add about **Rs 1104.12 Crores/annum** as Turnover against which approx. be **Rs 197.74 Crores** gross GST will be collected by the Govt. of India & State Govt. of Chhattisgarh. The salary and wages payable are estimated to be **Rs. 10.69 Crores** per annum. Payment towards power to the state grid will be approx. **Rs 66.1 Crores/Annum** This will be in addition to power cost savings from the captive power plant. From this the state Govt will get almost 6% as electricity duty. All the mentioned benefits will directly lead to the growth in the National GDP and State economy too.
- Preference will be given to local people, depending upon their qualification and skill. The salary wages payment will be above Rs. **10.69 Crores** per year.

9.0 ENVIRONMENTAL MANAGEMENT PLAN

An Environmental Management Plan comprising following set of mitigation, management, monitoring and institutional measures to be taken during implementation and operation of the project, to eliminate adverse environmental impacts or reduce them to acceptable levels.

- Overall conservation of environment.
- Minimization of natural resources and water.
- Ensure effective operation of all control measures.
- Monitoring of cumulative and longtime impacts.
- Ensure effective operation of all control measures.
- Control of waste generation and pollution.

The company will invest about Rs. **1728** Lakhs Capital cost on environment management plan and spent about Rs. **70** lakhs per year for operation and maintenance.

10.0 CONCLUSION

The proposed Greenfield project of M/s. SDRM Metaliks Pvt. Ltd. will be beneficial for the overall development of the nearby villages. Some environmental aspects like dust emission, noise, wastewater, traffic density, etc. will have to be controlled better than the permissible norms to avoid impacts on the surrounding environment in particular agriculture crop. Necessary pollution control equipment like ESP, bag house, Industrial sweeping machine, wheel washing system, Industrial grade vacuum cleaner, water sprinklers, enclosures, etc. form integral part of the plant infrastructure. Additional pollution control measures and environmental conservation measures will be adopted to control/ minimize the impacts on the environment and socio-economic environment of the area. Measures like development of green belt and plantation in nearby village and along transport road, adoption of rainwater harvesting/recharging in the plant and in nearby villages will be carried out. The proposed CSR/CER activities to be initiated by the industry will be helpful to improve the social, economic and infrastructure availability status of the nearby villages.

Thus, it can be concluded that with the judicious and proper implementation of the pollution control and mitigation measures, the proposed project will not add adverse pollution levels to the environment. As per employment point of view, it will be beneficial to the society and will help to reduce the demand-supply gap of steel to some extent and will contribute to the economic development of the region and thereby the country.

11.0 DISCLOSURE OF CONSULTANTS

The Environmental studies for proposed Greenfield project of M/s SDRM Metaliks Pvt. Ltd. has been carried out by M/s. Anacon Laboratories Pvt. Ltd., Nagpur (M/s. ALPL). Anacon established in 1993 as an analytical testing laboratory and now a leading Environmental Consultancy company backed by testing lab for environment and food in Central India region. M/s. ALPL is a group of experienced former Scientists from the Government Institutions and excellent young scientist of brilliant career with subject expertise. It is recognized by Ministry of Environment & Forests, New Delhi for carrying out environmental Studies & accredited by Quality Council of India (QCI) for conducting Environmental studies having Accreditation Certificate No.: **NABET/EIA/2326/RA 0304_Rev.01 dtd. 13 March, 2024** valid till Sept 29, 2026.