

## EXECUTIVE SUMMARY

### 1.1 Introduction

**KNK Corp Pvt. Ltd. (KNKCPL)** was incorporated as a private limited company on 9th September 2010 with the objective to process, crush, quarry, smelt, refine and dress all types of ores including iron ore etc through the process called Beneficiation and Pelletization. Refined ore will then be used in DRI Plants and Blast Furnaces. The Company has been promoted by Mr. Karan Mittal of Mittal Corp Limited & Associates.

Mittal Corp Limited (MCL) presently have installed capacity of 120000 TPA to manufacture three main Stainless Steel products as per the SAE/AISI viz. 201, 202, 304 and 400 series, catering to segments ranging from normal household goods to specialized steel for pharmaceuticals and other advanced applications spread over 17 acres at Unit I. MCL manufactures stainless steel billets and rolls the same into flats / rounds by utilizing Steel Melting Shop, AOD Converter, CCM, Rolling Mill and gas plant.

Mittal Corp Limited (MCL) started with a capacity of 18000 TPA by installing an 8 ton capacity furnace to manufacture mild steel in December 2004. In September 2006, company increased manufacturing capacity to 60,000 TPA by installing a 15 ton capacity furnace & AOD Converter. Company also installed a rolling mill of 1,00,000 TPA capacity in January 2008. Earlier Company used to outsource the rolling job which brings extra cost and delay in delivery to the customers. Installation of rolling mill had enabled company to sell products directly to customers. During March 2008 company had installed gas plant to produce Oxygen and Nitrogen with 400 cu.m. /hr. capacity. In August 2008 Company had installed 20 ton furnace and increased the capacity to 90,000 TPA. In May 2010 Company had implemented the expansion plan of capacity enhancement from 90000 to 120000 tonnes by the optimum

utilization of 20 tonne Induction furnace by installation of additional balancing equipments like 35 T AOD converter, Rolling Mill Automation, Automatic mould level controller (AMLC), addl. Oxygen Gas Plant & Cranes etc.

Mittal Corp Limited (MCL) has recently set up a 150,000 TPA capacity Steel Bar & Wire Rod Mill adjacent to its existing plant in Pithampur near Indore with capital cost of Rs. 160 Crores. It has selected M/s Danieli Morgardshammer, Sweden for supply of technology & main equipments for the proposed project. The Rolling Mill is capable of producing wire rod, rounds in all grades of stainless steel, alloy steel and carbon steel. Equipment installed incorporates contemporary technology and processes which is used for the first time in India for stainless steel, alloy steel and carbon steel.

With all these promoter's experience, KNKCPL proposes to set up Iron Ore Beneficiation and Pelletization Plant at Kotekal Village, Badami Taluk, Bagalkot District, Karnataka. The project details are given in **Table 1.1**.

**Table 1.1 Details of proposed plant**

<b>Project</b>	: Beneficiation and Pelletization Plant
<b>Project Proponent</b>	: M/s. KNK Corp Pvt. Ltd.
<b>Location</b>	: Kotekal Village, Badami Taluk, Bagalkot District, Karnataka State.
<b>Area</b>	: 318.182 Acres (128.7639ha)
<b>Plant Capacity</b>	: Beneficiation Plant 1.2 million tones per annum Pelletization Plant: 1.2 million tones per annum.

## 1.2 Site Location and Accessibility

Accessibility and transportation of heavy equipment to site by road or rail is easy. No problem is envisaged in accessibility and transportation of heavy equipment to

site by road or rail as nearest railway station is Gulledagudda which is about 8 Km from the site. Road connectivity is through State Highway located at distance of 2 Km from the plant. Plant location has been so chosen that, it is close to the main road and broad gauge railway line thus, transportation of finished products to various sites is easy and economical. Details of the locations are given in **Table 1.2.**

**Table 1.2: Location Details**

Survey Nos.	95 & 100A
Longitude	75°45'50.68" E.
Latitude	16°4'55.38" N
Village	Kotekal
Tehsil	Badami
District	Bagalkot
State	Karnataka

### 1.3 Topography

The project site of 378.42 Acres, designated as the core zone, is a plain / plateau with an altitude of 560 m above MSL. There are no perennial river / water courses within the proposed site. This area is totally devoid of any vegetation. The land is non-residential, non-irrigated with no forest land. The nature of the land is slightly/gently slope.

### 1.4 Drainage

The drainage pattern of the area is dendritic to sub-dendritic in nature. The nallahs are seasonal in nature and remain dry most of time excepting during the short period of actual rainfall. There are no perennial sources of water in core zone. The rain water from the project area will join the natural drain.

### 1.5 Manufacturing Details

Details of the proposed Plant are given at **Table 1.3.**

**Table 11.3: Proposed Manufacturing Facilities**

Sr. No.	Particulars	Capacity
1	Beneficiation (Iron Ore Fines)	12,00,000 TPA
2	Pelletization Plant	12,00,000 TPA

### 1.6 Waste Disposal

From the process, waste generated will be in slurry form. The water and tailings will be separated by employing new technology. The water will be recycled and the tailing will be dried and sold to nearby brick and cement industries.

### 1.7 Employment Potential

The proposed Beneficiation & Pelletization plant will create employment potential up to 385 people and preference will be given to local community.

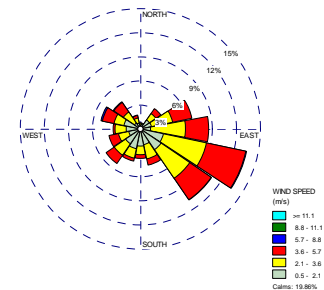
### 1.8 Environmental Description

#### 1.8.1 Meteorology

Study period

Winter 2012-13 (December 2012, January - February 2013)

Predominant wind direction is East to West.



**Table No: 1.4: Salient Features of the Project**

Site location	Kotekal Village, Badami Taluk, Bagalkot District.
State	Karnataka
Land availability	318.182 Acres (128.7639ha)

Altitude	560 m above MSL
Longitude	75°45'50.68" E.
Latitude	16°4'55.38" N
Relative humidity %	27-78%
Temperature Range	12.4 Deg. C. minimum 29.9 Deg. C. maximum
Rain fall	562 mm average
Nearest town	Sirur - 3.5 Km
Nearest cities	Gulledagudda - 8.0 Km
Nearest airport	Hubli Airport - 150 Km
Nearest rail heads	Gulledagudda at 8 Km from the project site
Nearest highway	Guledgudda - Badami State Highway which is at a distance of 2.0 km from the project site
Source of water	Krishna River which is 16 km from the project site

### 1.8.2 Baseline Ambient Air Quality

The design of monitoring network in the air quality surveillance program was based on topography/terrain of the study area, human settlements, Wind pattern, representation of regional background levels, accessibility of monitoring sites and resource availability.

The scenario of the existing Ambient Air Quality in the study region has been assessed through a network of 6 Ambient Air Quality locations in the buffer zone and 1 monitoring location within the project site. Summary of Ambient Air Quality is given in **Table 1.5**.

**Table No: 1.5: Summaries of Ambient Air Quality Data**

Units:  $\mu\text{g} / \text{m}^3$

Code	Name of Sampling Location	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>
<b>Core Zone</b>					
A-1	Project Site	42	18	20.0	22.3
<b>Buffer Zone</b>					
A-2	Kotekal Village	47	16	21.1	23.5
A-3	Gulledagudda Village	47	16	21.1	23.5
A-4	Sirur Village	47	14	20.1	22.4
A-5	Thimmasagara Village	44	14	18.7	21.5
A-6	Tuganshi Village	42	14	17.9	21.0
A-7	Hanapur Tanda	42	14	18.1	21.3
A-8	Forest Area near Kotaginahalli Village	39	15	18.1	21.0

The ambient air quality observed during the study period is well within the prescribed National Ambient Air Quality Standards prescribed by CPCB.

### 1.8.3 Ambient Noise Levels

Present noise level at study area is given in Table 1.6.

**Table No: 1.6: The present Noise levels were measured at 8 locations. The results obtained are as follows.**

Villages / Parameters	Minimum	Maximum
Proposed Project Site	43.2	49.1
Kotekal Village	42.2	48.3
Gulledagudda Village	43.8	50.1
Sirur Village	42.8	49.1
Thimmasagara Village	40.1	45.6

Tuganshi Village	43.4	48.1
Hanapur Tanda	41.2	47.5
Forest Area near Kotaginahalli Village	44.1	49.6

It is observed that the noise values obtained were within the prescribed Ambient Air Quality Standards with respect to Noise.

#### 1.8.4: Water Quality

Water samples were collected from the available surface and ground water sources and have been analyzed to assess the quality of water. Water Sampling Locations with distance from the project site are given in **Table 1.7**.

**Table No: 1.7: Surface & Ground Water Sampling Locations with distance from the Core Zone**

Code	Name of Sampling Location	Direction	Distance in Km
<b>Surface Water Sampling Locations</b>			
SW1	Herekere Halla Surface Water	SE	2.5
SW2	Herekere Halla Upstream	SE	3.0
SW3	Herekere Halla Downstream	S	5.0
SW4	Malaprabha River Downstream near Asangi Village	E	8.0
SW5	Malaprabha River Upstream near Allor Village	W	6.0
<b>Ground Water Sampling Locations</b>			
GW1	Borewell Water at Kotekal Village	2.0	E
GW2	Borewell Water near Gulledagudda Village	3.5	NE
GW3	Bore well water at Tuganshi Village	6.0	W
GW4	Bore well water at Hanapur Village	7.0	S
GW5	Bore well water at Kotaginahalli Village	5.0	SE
GW6	Bore well water at Lingapur Village	7.5	NW

GW7	Bore well water at Sirur Village	5.0	SW
GW8	Bore well water at Raghapur Village	6.0	W

**Table No 1.8: Summary of Water Quality**

Unit mg/l

Sample	TDS	Iron as Fe	Hardness as CaCO <sub>3</sub>	Chloride as Cl	Nitrate as NO <sub>3</sub>	Flouride as F
Ground Water	266-1140	0.1-0.5	150.9-474.3	77.3-187.9	14.0-21.6	< 1

### 1.8.5 Soil Quality

Seven locations were selected for analyzing the soil quality status both in core & buffer zone. Soil Sampling Locations with distance from the Core Zone is given in Table 1.9.

**Table No: 1.9 Soil Sampling Locations with distance from the Core Zone**

Code	Name of Sampling Location	Direction	Distance in Km.
S1	Project Site Soil	--	--
S2	Agricultural Soil near Gulledagudda Village	E	2.0
S3	Agricultural Soil near Sirur Village	N	5.0
S4	Forest/ Agricultural Soil near Thimmasagara Village	NW	6.0
S5	Forest / Agricultural Soil near Tuganshi Village	W	6.0
S6	Agricultural Soil near Hanapur Tanda	S	7.0
S7	Forest / Agricultural Soil near Kotaginahalli Village	SE	5.0

The findings are:

- pH varies from 6.69 to 8.06
- The Nitrogen content varies from 7210 to 25874 Kg/ha
- The Phosphorous content is between 163.5 to 1050 Kg/ha
- The Potassium concentration was 74 mg to 420 mg /100 gm



- The Sodium varies from 29.8 to 90.0 mg/100 gm
- The texture of the soil in the study area observed to be of sandy clay loam type.

### 1.8.6 Socio Economics

There is no human habitation in the core zone. The socio economic condition is summarized as below. Population Details at study area is given in **Table 1.10**.

**Table 1.10 Population Details**

Population	Total No of House Holds	Total Population	Others			S.C		S.T	
			M	F	T	M	F	M	F
2001 Census	7289	41748	19552	13400	32952	2652	2664	1731	1749

### 1.8.7 Biological Environment

There are no endemic species or endangered species of flora and fauna.

## 1.9 Environmental Impacts and Management Plan

### 1.9.1 Air Environment

The proposed beneficiation and pelletization plant will be set up in the Karnataka Industrial Area Development Board (KIADB) allocated land covering an area of 378.42 Acres. Main source of air pollution in a plant is from various works in the plant. Main sources of fugitive emissions are raw material unloading, raw material handling, product house, material transfer points, storage bin etc. in addition to this, dust will generated due to movement of vehicles.

The dust generated during movement of tippers on the road is the main source of pollution.

### 1.9.1.1 Mitigation Measures

*Management proposes the following effective control measures;*

- The raw material stock pile will be sprinkled with water to avoid dust escape due to wind,
- Feed point to the belt conveyor will be provided with mist spray arrangement,
- Feed belt conveyor will be covered throughout the length so as to avoid wind coming in contact with the dry raw material,
- Feed hopper will be provided with “**Dust Hood**” to avoid dust dispersion from the feed point. Tipper bodies will be checked for any leakages through the body and corrective action will be taken.
- Entire beneficiation process will be closed circuit (in-house) and wet in nature, hence no air pollution from the plant,
- As the processed ore will have moisture content, transportation of the same through public roads will not generate dust,
- Ore carrying trucks will be effectively covered with tarpaulin,
- Overloading of tippers will be avoided so that there is no spillages on the public road and wastage of non-renewable resources,
- Transport vehicles will be regularly checked for their environmental fitness like pollution under control and fitness etc,
- Green barriers with tall growing thick foliage plants species will be developed around the plant premises to arrest noise transmission and dust dispersion,
- For safety of workers at site, engaged at strategic locations/dust generation points Personnel Protective Equipment (PPE) would be provided and ensured for using the same,
- Environmental monitoring of air quality to take mid-course correction, if required to keep the pollution constituent with-in the permissible limits always.

## 1.9.2 Noise Environment

The main sources of noise in the mine are classified into following types:

- Crushing
- Grinding
- Operation of Heavy Earth Moving Machinery (HEMM)

### 1.9.2.1 Mitigation Measures for Noise Control

- ❖ Necessary steps will be taken to reduce noise generation from noise generating sources.
- ❖ A green belt will be made by selecting thick foliage and tall growing plants around the plant premises which will act as acoustic barriers in arresting noise transmission,
- ❖ Providing PPE (Personal Protective Equipment) to the personnel who are exposed continuously to the high noise zone/ operation area.
- ❖ Display of sign boards at high noise generation zones.
- ❖ Corrective & preventive maintenance of plant & machinery including transport vehicles.
- ❖ Providing rubber lining at screening decks to reduce noise generation,
- ❖ Transport vehicles engaged are ensured for not over speeding, their fitness certificate, pollution under control (PUC) certificate etc.

## 1.9.3 Water Environment

The impact on water environment has been considered under the following heads:

- Water consumption
- Impact on ground water
- Impact on surface water bodies
- Storm water management

The water requirement for the proposed plant is 3600 m<sup>3</sup>/day. The rejected material namely Banded Hematite Quartzite (BHQ) generated out of mining is used as a raw material for plant, which is of non-toxic in nature. There will not be any impact to the ground water through seepage, if any.

### **1.9.3.1 Mitigation Measures of Water Pollution**

The chemical analysis of the iron ore does not show any toxic substance, which can dissolve and pollute water quality.

- ❖ Construction of parapet wall of appropriate dimension all along the toe of ore stock,
- ❖ Contour trench of appropriate width and depth all along the ore stock,
- ❖ Systematic drainage system for diverting the surface run-off during monsoon.
- ❖ Plantation of local varieties of species, so that there will be fast and healthy growth of vegetation.
- ❖ Regular monitoring and analyzing the quality of water
- ❖ The process water will be recycled and reused.

### **1.9.4 Land Environment**

Proposed beneficiation and pelletization plant and its allied activities will be restricted over an area of 378.42 Acres, allocated by Karnataka Industrial Area Development Board (KIADB). There will not be any impact due to operation of the proposed plant to buffer zone land use.

#### **1.9.4.1 Disposal of Waste**

The total waste likely to generate will be silt obtained in the tailing pond. The waste will be in dry tailings, after removing the water content from the beneficiation plant, used oil from pelletization plant. Entire solid waste will be used for ancillary industries like cement and brick industries and used oil will be given to authorized reprocessor/recycler.

#### **1.9.4.2 Afforestation**

Plantation is proposed to be carried out around the plant premises with tall growing having thick foliage plant species.

All effort will be made to improve the survival rate of the saplings and their healthy growth will be taken care of by simple methods like proper watering, fencing and after care.

#### **1.9.4.3 Resettlement**

There are no human settlements within the project site area. The entire project area of 378.42 Acres allocated by Karnataka Industrial Area Development Board (KIADB) which has been purchased for setting up of the proposed project. Hence, no resettlement and rehabilitation is involved.

### **1.10 Biological Environment**

There is no adverse impact on core-zone as well as buffer zone Flora and Fauna due to proposed Beneficiation and Pelletization plant.

### **1.11 Demography & Socio Economic Environment**

The objective is to demonstrate the range of potential impacts on communities and families by the project. The actual impacts experienced at a given project site will depend on a variety of factors.

The impact of the beneficiation plant project on the surrounding community will be positive in nature in improving the Quality of Life (QoL), economic status of the local people and infrastructure in buffer zone.

#### **1.11.1 Social Corporate Responsibility**

The management proposes to increase literacy levels within buffer zone, by way of support to school going children through free distribution of books and by way of supporting NGO's for adult education.

Management will actively participate in the efforts by the local bodies and the Government to improve the health and social status of the population living in the buffer zone villages. Management proposes to extend the medical assistance to the local needy people by engaging a part time Medical Officer on a regular basis.

However, management allocates necessary funds towards community developmental activities in the buffer zone villages to improve the facilities such as school, health, road, infrastructure etc.

### **1.11.2 Other Tangible Benefits**

The proposed project is likely to have other tangible benefits as given below.

- Indirect employment opportunities to local people in contractual works like housing construction, transportations, sanitation, for supply of goods and services to the project and other community services.
- Additional housing demand for rental accommodation will increase
- Market and business establishment facilities will also increase.
- Cultural, recreation and aesthetic facilities will also improve.
- Improvement in communication, transport, education, community development and medical facilities.
- The State Government will also benefit directly from the proposed project, through increased revenue from royalties, excise duty.
- Country will also earn foreign exchange due to export of finished product.

### **1.11.3 Occupational Health and Safety**

- Preliminary screening of all the employees for their baseline health condition.
- Medical evaluation of workers condition before joining to the duty.
- Educating the workers w.r.t the safety conditions & occupational health diseases.

- Regular health checkups for all the employees will be conducted.
- Database will be created for individual worker and will be updated regularly to compare health status.
- Doctor specialized in Occupational health will be appointed for special needs.

### 1.12 Post Project Monitoring

The company will undertake post project monitoring as per MoEF guidelines for all the environmental attributes.

### 1.13 Financial Considerations

After an in-depth examination of the environment management plan, the management has made a time specific budgetary cost allocation towards carrying out environmental related works on a continuous basis and the same is given below in Table 1.11.

**Table 1.11: Proposed Costing Towards Environmental Protective Measures**

Sr. No.	Activity	Initial cost (Lakh Rs.)	Recurring expenses proposed/ annum (Lakh Rs.)
1	Air Pollution Control Measures such as covering of belt conveyors, providing mist spray at feed points etc.	860.00	129.00
2	Plantation and after care measures (Rs.28,67,750/10 years)+ after care	33.87	3.10
3	Socio-Economic Welfare Measures as a corporate social responsibility (CSR)	-	75.00
4	Water pollution control measures	651.00	20.00
5	Occupational Health & Safety	20.00	7.75

6	Environmental Monitoring	Nil	12.50
7	Preventive and corrective maintenance of plant and machinery to reduce noise pollution and consumption of non renewable resources (15% of the plant & machinery cost)	-	38.65
	<b>TOTAL</b>	<b>1564.87</b>	<b>286.00</b>

**Project Cost:** The estimated cost of the project is **Rs. 569.46 Crores.**

### 1.14 Conclusion

It can be concluded that there would be negligible impact in the buffer zone due to the proposed beneficiation and pelletization plant. The project will contribute to the socio-economic development, strengthening of infrastructural facilities like medical, educational etc. The plant will be operated keeping “Sustainable Development” of the region in mind.

Further, management is committed to contribute towards improving socio-economic status of the surrounding local community.

Environmental monitoring is a successful tool for the management for implementation of adequate & effective environmental measures. It also helps the management to take mid course correction, if required based on the environmental monitoring results.

Considering the above overwhelming positive impact on the community, there will be overall development of the area. Hence, it is requested that Environmental Clearance may be granted for this very ambitious project of M/s. KNK Corp Pvt. Ltd., to be set up in backward district of Karnataka.