

# **PRE FEASIBILITY REPORT OF DUMARPARA DOLOMITE MINE**

**MINERALS - DOLOMITE**

**(LEASE PERIOD 20.05.2002 TO 19. 05.2022)**

**LEASE AREA - 42.754 HECTARES**

**MINING PROJECT - CATEGORY-"B"**

**Village– Dumarpara**

**Tehsil – Sakti,**

**District- Janjgir- Champa,**

**State – Chhattisgarh**

## **PROJECT PROPONENT**

**M/S. SRI BALAJI METALS & MINERAL PVT. LTD.**

**23A, NETAJI SUBHAS ROAD**

**3<sup>RD</sup> FLOOR, SUITE NO.6, KOLKATA-700001**

## **PROJECT CONSULTANT**

**M/S. GREENCINDIA CONSULTING PRIVATE LIMITED**

**607-611, SHOPPRIX MALL, SECTOR-5, VAISHALI,**

**GAZIABAD-201010**

# PRE-FEASIBILITY REPORT

FOR DUMARPARA DOLOMITE MINING PROJECT, VILLAGE- DUMARPARA  
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## 1. EXECUTIVE SUMMARY

The mining site is at located in village- Dumarpara, Tehsil- Sakti, District- Janjgir-Champa, State- Chhattisgarh. The location map of the mining site is added as **Annexure-I**. The total mining lease area is 42.754 ha with mineral Dolomite. The total Geological (Category 121 &122) reserve of 31.7958 million tons of Dolomite was estimated in the approved mining scheme and 22.3702 million tonnes were considered as mineable reserves. The area of mine lease is Private waste land. Open cast Mechanized mining method with drilling and blasting is the only suitable method of mining for such type of deposit. Brief description of the project is described below.

### 1.1 Salient feature of the project

**Table Error! No text of specified style in document.-1:- Salient Features of the Project**

Sl. No.	Parameters	Description						
1	Name of the project	Dumarpara Dolomite Mine						
2	Nature of the project	Dolomite Mining						
3	Project Proponent	M/S. SRI BALAJI METALS & MINERAL PVT. LTD.  23A, Netaji Subhas Road  3 <sup>rd</sup> Floor, Suite no-6, Kolkata-700001						
4	Lease period validity	20.05.2002 to 19. 05.2022						
5	Date of grant lease	On dated 20.05.2002 mining lease was granted to M/s Star Ferro Alloys Pvt. Ltd. for the year of 20 years. Lease was transferred in the name of M/s Sri Balaji metals & Minerals Pvt. Ltd. on 30.08.2005 for balance period of mining lease.						
6	Details of the Lease Area	<table><tr><th>Village Name</th><th>Khasra No</th><th>Area</th></tr><tr><td>Dumarpara</td><td>2316/1,2322/1,2322/2,2333/5,2350/1,  2357/2,2358/1,2358/2</td><td>42.754  Ha</td></tr></table>	Village Name	Khasra No	Area	Dumarpara	2316/1,2322/1,2322/2,2333/5,2350/1,  2357/2,2358/1,2358/2	42.754  Ha
Village Name	Khasra No	Area						
Dumarpara	2316/1,2322/1,2322/2,2333/5,2350/1,  2357/2,2358/1,2358/2	42.754  Ha						
7	Total Lease area	42.754 Ha						
8	Capacity of the project	3,40,393.16 Tonnes						
9	Category of the project	“B”						

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Sl. No.	Parameters	Description		
10	Location of the project	Village- Dumarpara, Tehsil- Sakti, District- Janjgir-Champa, State- Chhattisgarh		
11	Lease area Coordinate	<b>Points (Block-A)</b>	<b>Latitude</b>	<b>Longitude</b>
		A	21°58’51.85” N	82°50’13.71” E
		B	21°58’50.15” N	82°50’24.62” E
		C	21°58’34.66” N	82°50’23.44” E
		D	21°58’47.47” N	82°50’14.13” E
		<b>Points (Block-B)</b>	<b>Latitude</b>	<b>Longitude</b>
		A	21°58’46.58” N	82°50’28.06” E
		B	21°58’45.58” N	82°50’38.06” E
		C	21°58’49.24” N	82°50’38.23” E
		D	21°58’48.28” N	82°50’50.86” E
		E	21°58’57.51” N	82°50’50.07” E
		F	21°58’59.49” N	82°50’38.50” E
		G	21°58’54.65” N	82°50’37.70” E
		H	21°58’53.11” N	82°50’27.32” E
		<b>Points (Block-C)</b>	<b>Latitude</b>	<b>Longitude</b>
		A	21°58’41.39” N	82°51’21.89” E
		B	21°58’37.11” N	82°50’22.08” E
		C	21°58’37.41” N	82°50’29.82” E
		D	21°58’27.12” N	82°50’31.80” E
		E	21°58’34.15” N	82°50’40.67” E
		F	21°58’44.46” N	82°50’39.39” E
		G	21°58’42.73” N	82°50’31.19” E
		10 km study area map is attached as a Annexure-2		
12	Land Type	Private Waste land Private Waste land		



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Sl. No.	Parameters	Description
13	Method of Mining	Opencast Mechanized method
14	Operational days/year	300
15	Total water requirement	3.11 KLD
16	Source of water	Tube-well nearby mine lease area.
17	Man power requirement	30 Persons
18	Nearest Railway Station / Airport along with distance in kms.	Raipur Airport-about 144 km in SW direction.
		Baradwar Railway Station-About 4 km in NW direction
19	Nearest Town, city, District Headquarters along with distance in kms.	Nearest Town-Naya Baradwar (About 5 km area-NW)
		Nearest City- Raigarh (About 58 km in ESE direction)
		District Headquarter-Janjgir (About 29 km in WNW direction)
20	Ecological Sensitive Areas (Wild life Sanctuaries, National Parks, Biosphere Reserves, Reserve/ Protected Forest etc)	None of there.
21	Historical Places	None
22	Nearest Forest	Nawapara Forest Range (About 45 km in SSW direction)
23	Financial & Social benefit	This Project is providing employment to local people directly and indirectly.

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## **2. INTRODUCTION OF THE PROJECT/BACKGROUND INFORMATION**

### **2.1. Identification of Project Proponent, In case of mining project, a copy of mining lease /letter of intent should be given.**

#### **2.1.1. Project Proponent-**

M/s. Sri Balaji Metals & Mineral Pvt. Ltd.

#### **2.1.2. Address of the Lessee:**

23A, Netaji Subhas Road

3<sup>rd</sup> Floor, Suite no-6, Kolkata-700001

#### **2.1.3. Mining Lease Area**

The mining lease area is 42.754 hectare and it is a Private waste land. On dated 20.05.2002 mining lease was granted to M/s Star Ferro Alloys Pvt. Ltd. for the year of 20 years (20.05.2002 to 19.05.2022). Lease was transferred in the name of M/s Sri Balaji metals & Minerals Pvt. Ltd. on 30.08.2005 for balance period of mining lease.

### **2.2. Brief Description of Nature of Project:**

Dumarpara dolomite mine is at located in village- Dumarpara, Tehsil- Sakti, District- Janjgir- Champa State- Chhattisgarh over an area of 42.754 Ha. The average capacity of the project is 0.3 million tonnes/ annum.

It is an existing mine. Initially environmental clearance was given to M/s Balaji Metals & minerals Pvt.Ltd. for dolomite mining of 1, 50, 000 TPA capacity in area with crushing and screening vide letter no.99/SEIAA-CG/EC/Mining/JANJ/48/10 dated 06-05-2010 and attached as **Annexure-5**. Now it is going expand is capacity from 1, 50, 000 Tonnes to 3, 40, 393.16 Tonnes.

As per the mining plan the dolomite of this mine is suitable as flux in steel plant. There will be no changes in the design of mine. Benches have to be maintained as earlier. Overburden bench is 2.5 m and height of dolomite bench will be maintained 5 meter. The benches have to be developed for transportation on the trucks to the working pit.

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All operations of the opencast working will be mechanized. Drilling operation is done with the help of Wagon drill Dia 84mm with the compressed air. All the machineries are used on own or hired basis by the owner.

The details of machinery to be used in the mining are given in below Tables.

### Drilling Equipment:-

**Table Error! No text of specified style in document.-2:- Drilling Equipment**

Type	Nos	Dia of hole	Size/capacity	Make	Motive power	H.P
Compressor	1	-	110CFM	Atlas Copco	Diesel	85
Wagon Drill	1	100mm	100	Atlas Copco	Com.Air	-

Source: - Siddharth Geo Consultants prepared by Arvind Singh Reg. No. RQP/NGP/225/2000/A

### Loading equipment:-

**Table Error! No text of specified style in document.-2:- Details of Loading Equipment**

Type	Nos	Bucket Capacity	Make	Motive power	H.P
J.C.B	2	2 Cubic meter	Volvo	Diesel	Nil

Source: - Siddharth Geo Consultants prepared by Arvind Singh Reg. No. RQP/NGP/225/2000/A

### Haulage and transport equipment:-

**Table Error! No text of specified style in document.-3:- Details of Haulage and Transport Equipment**

Type	Nos	Size capacity in tonnes	Make	Motive power	H.P
Tippers	10	10 Tonnes	Tata	Diesel	85

Source: - Siddharth Geo Consultants prepared by Arvind Singh Reg. No. RQP/NGP/225/2000/A

## 2.3. Need for the project and its importance to the country and REGION

### 2.3.1. Need for the project

Chhattisgarh is a rich state in mineral. The state is endowed with major and minor mineral resources. The region, where the project is situated, people are mostly dependant on agriculture and mineral resources. The developments of mining in the area provide direct and indirect employment opportunities, infrastructure development, communication and development socio-economic

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infrastructure. The important benefits accruing from the project can thus be stated as - boost to local and regional economy, direct contribution to the state exchequer.

### 2.3.2. Importance to the country and region

Dolomite after calcination is used for refractory purposes (as a substitute of magnesite refractories) in linings of furnaces like basic open-hearth steel furnaces and basic Bessemer converters.

High purity dead-burnt dolomite bricks are required for lining LD furnaces, while mini-steel plants generally require dolomite for fettling and refractory purposes. Like limestone, dolomite is used as a flux in iron & steel, Ferro-alloys and glass works. Few steel plants have dispensed with the use of dolomite in blast furnaces and its use in the preparation of self-fluxing sinters is found adequate for blast-furnace charge. Thus the mineral has a great importance in the market.

### 2.3.3. Physic-chemical nature of dolomite

**Dolomite** is an anhydrous carbonate mineral composed of calcium magnesium carbonate  $\text{CaMg}(\text{CO}_3)_2$ .

Average chemical composition of dolomite is-

$\text{Al}_2\text{O}_3$ -0.57%

$\text{SiO}_2$ -2.66%

$\text{CaO}$ -31.10%

$\text{MgO}$ -19.12%

LOI-45.42%

*Source: - Siddharth Geo Consultants prepared by Arvind Singh Reg. No. RQP/NGP/225/2000/A*

### 2.4. Demand and Supply Gap

Dolomite is consumed by iron & steel, Ferro-alloys, fertilizer, glass, alloy steel and other industries. The total consumption of dolomite in 2011-12 was 6.33 million tonnes. It increased by 1% from that in the year 2010-11, mainly in sponge iron industry. Iron & steel industry was the major consumer of dolomite in 2011-12 accounting 72%, followed by sponge iron (17%) and cement & Ferro-alloys (2% each). The remaining quantity was utilised by other industries, such as alloy steel, glass, fertilizer, paint, refractory, etc.

Chhattisgarh, the leading producing state of dolomite accounted for 30% of total production in 2011-12, followed by Odisha (22%), Andhra Pradesh (18%), Karnataka (10%) and Madhya Pradesh (6%). The remaining 14% was jointly shared by Gujarat, Jharkhand, Maharashtra, Rajasthan and Uttarakhand (*Source: Indian mineral year book 2012*)

## **2.5. Imports v/s Indigenous Production**

There is always good demand for industrial grade dolomite in the market. Thus imports of dolomite increased drastically to 1,594,573 tonnes in 2011-12 from 611,833 tonnes in 2010-11. Imports were mainly from UAE (57%) and Thailand (30%)

(Source: Indian mineral year book 2011)

## **2.6. Export possibility**

Exports of dolomite increased considerably to 40,254 tonnes in 2011-12 from 26,801 tonnes in 2010-11. Exports were mainly to Nepal (58%), Bangladesh (27%) and Malaysia (7%) in 2011-12.

(Source: Indian mineral year book 2011).

## **2.7. Domestic/Exports Markets**

Dumarpara dolomite mine is produce high grade type dolomite and the mineral is being marketed to steel plant and other industries. The proposed mining activity is for indigenous consumption only for industries. There is no proposal to export the mineral.

## **2.8. Employment Generation (Direct & Indirect) due to the project**

There are thirty workers (30) has employed form nearest villages. The workers are coming from semi-skilled and unskilled both sectors.

**3. PROJECT DESCRIPTION****3.1. Type of Project including interlinked and interdependent projects, if any**

As per notification of Ministry of Environment and Forest (MoEF), New Delhi all projects below than 50 hectare falls in category “B” as in this case the lease area is 42.754 hectare, so this is also falls in “B” category.

**3.2. Location (map showing general location, specific location, and project boundary & project site layout) with coordinates.**

This is a dolomite Mining project and located near village- Dumarpara, Tehsil- Sakti, District- Janjgir-Champa State- Chhattisgarh over an area of 42.754 Ha. The lease area is fall in Private Waste land. The mine lease area is not covered by any watercourses in the form of river, nallah etc. The details of the project co-ordinate are described in below Table 3.1.

**Table Error! No text of specified style in document.-3:- Project Coordinates**

<b>Points (Block-A)</b>	<b>Latitude</b>	<b>Longitude</b>
A	21°58'51.85" N	82°50'13.71" E
B	21°58'50.15" N	82°50'24.62" E
C	21°58'34.66" N	82°50'23.44" E
D	21°58'47.47" N	82°50'14.13" E
<b>Points (Block-B)</b>	<b>Latitude</b>	<b>Longitude</b>
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B	21°58'45.58" N	82°50'38.06" E
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E	21°58'57.51" N	82°50'50.07" E
F	21°58'59.49" N	82°50'38.50" E
G	21°58'54.65" N	82°50'37.70" E
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Points (Block-C)	Latitude	Longitude
A	21°58'41.39" N	82°51'21.89" E
B	21°58'37.11" N	82°50'22.08" E
C	21°58'37.41" N	82°50'29.82" E
D	21°58'27.12" N	82°50'31.80" E
E	21°58'34.15" N	82°50'40.67" E
F	21°58'44.46" N	82°50'39.39" E
G	21°58'42.73" N	82°50'31.19" E

### 3.3. Details of alternate sites considered and the basis of selecting the proposed site, particularly the environmental considerations gone into should be highlighted.

It is naturally occurring rocks which is site specific due to its geological origin. The dolomite occurs below thin cover of soil. The dolomite occurs in the form of bed, mechanized open cast mining method induction of drilling and blasting is the only suitable method for such type of deposit. The maximum height of benches will be maximum 5.00m. Drilling and blasting will be done by small values. For increased production, mining is proposed by open-cast mechanized method. This lease is granted by the state govt. This is ongoing mining project and this is for renewal of mine period. So there is no need for alternate site consideration.

### 3.4. Size and Magnitude of Operation

The mining will be carried out in the mine lease area by adopting open cast mechanized method with use of excavator and tipper. Proposed five year production details are shown in below

**Table Error! No text of specified style in document.-4:- Five year Production Proposal**

Year	Production proposal in Block-B	Production proposal in Block-C	Total production
2013-14	1,10,436.14	1,60,405.81	2,70,841.95
2014-15	1,16,240.76	1,80,629.09	2,96,869.85
2015-16	1,24,756.15	2,15,637.01	3,40,393.16

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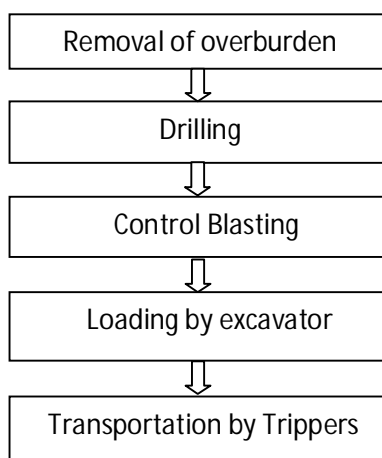
3

2016-17	1,50,941.72	1,80,664.17	3,31,605.89
2017-18	1,31,018.35	1,67,155.17	2,98,173.52

Source: - Siddharth Geo Consultants prepared by Arvind Singh Reg. No. RQP/NGP/225/2000/A

### 3.5. Project description with process details (a schematic diagram/flow chart showing the project layout, components of the project etc. should be given)

Open cast mining method is being adopted. At present the mining operation is being carried out in open cast semi-mechanized method but proposed scheme period (2013-14 to 2017-18) mechanized mining method will be adopted. The alluvial soil & overburden (lateritic soil) is removed by the excavator. Rest all the other operation like sizing, loading etc. done by mechanized method. Drilling and blasting are carried out for production of Dolomite. Heavy hammer and harden chisels yield the sufficient quality of Dolomite. The large size of dolomite boulders are sometimes required secondary blasting. 10 to 15 inches size of dolomite turn into 4 to 6 inches with the help of heavy sludge hammer and chisel. The mine is working in four bench of Dolomite ore body, having height of 5 meters. The mineral is sized according to the consumer's specification and stacked on the mine surface. This stacked Dolomite is transported to the consumers by their own and hired trucks. Loading sized Dolomite in trucks is done semi-mechanized with the help of local labours. During the mining operation the overburden is removed separately and not mixed with the dolomite fines and stacked properly in the proposed place for reclamation purpose only.





**Figure 3.1: Flow chart of the project****3.6. Raw material required along with estimated quantity, likely source, marketing area of final products/s, Mode of transport of raw Material and Finished Product.**

No raw material will be required for production of dolomite.

Marketing area: Company is engaged in the business of mining since long and worked as contractor for Bharat Aluminium Company, Korba and has produced with own means approx. 7 lac tonnes of Bauxite on year basis. And recently M/s JSPL, Raigarh placed an order of 2.5 lac tonnes for half yearly requirement.

So far selling of dolomite is concerned, it is well known that there is huge consumption of dolomite in the various steel plants of the Government and private sector and in addition to about 100 sponge iron plant is under production. Mode of transportation of finished product: The mineral is sized according to the consumer's specification and stacked on the mine surface. The stacked Dolomite is transported to the consumers by their own and hired trucks.

**3.7. Resource optimization/recycling and reuse envisaged in the project, if any, should be briefly outlined.**

Water will be accumulated in the excavated mine out pit area during rains and pits serve as a natural ground water recharging structure. As a result of extraction of mineral, the rate of charging of ground water is likely to be increased considerably. Water collected in the sump will be used in various purposes at mine viz. plantation, dust suppression etc.

**3.8. Availability of water its source, Energy/power requirement and source should be given**

Total water requirement in the mine will be about 3.11 KLD for drinking & domestic use, dust suppression and plantation. Drinking water will be collected from Tube well. Besides above rainy water will be collected in the working pit which will be used for dust suppression and plantation purpose.

Diesel is used as motive source of primary energy for mine machinery. Diesel will be used in compressor, JCB and dumpers and tippers. Diesel will be outsourced from nearby diesel pumps.

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## 3.9. Quantity of wastes to be generated (liquid and solid) and scheme for their management/disposal

Dolomite of this mine is covered with overburden 2.5 meters in thickness. Yearly generation of waste of this mine in the form of overburden is estimated for the next 5 year of mining operation is shown in table 3-3 and table 3-4

**Table Error! No text of specified style in document.-3:- Details of Waste Generation of Block-B**

Scheme period	Top soil in Tonnes	Lateritic soil in Tonnes	Total overburden in Tonnes
	$M^3 \times 1.4 = T$	$M^3 \times 2.65 = T$	
(2013-14)	16,713.2	25,310.15	42,023.35
(2014-15)	33,868.8	51,288.1	85,156.9
(2015-16)	23,114	--	23,114
(2016-17)	Nil	35001.2	35,001.2
(2017-18)	Nil	Nil	Nil
<b>Total</b>	<b>73,696</b>	<b>1,11,599.45</b>	<b>1,85,295.45</b>

**Table Error! No text of specified style in document.-4:- Details of Waste Generation of Block-C**

Scheme period	Top soil in Tonnes	Lateritic soil in Tonnes	Total overburden in Tonnes
	$M^3 \times 1.4 = T$	$M^3 \times 2.65 = T$	
(2013-14)	67,405.8	91,864.9	1,59,270.7
(2014-15)	71,192.8	97,026.04	1,68,218.8
(2015-16)	51,310	69,928.2	1,21,238.2
(2016-17)	Nil	Nil	Nil
(2017-18)	Nil	Nil	Nil
<b>Total</b>	<b>1,89,908.6</b>	<b>2,58,819.14</b>	<b>4,48,727.7</b>

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### 3.9.1. Selection of dumping site for Block-B:

The generated alluvial soil during 1<sup>st</sup> years and some quantity of second year will be dumped in 7.5 meter barrier zone at 5m height for plantation purpose and generated during 2<sup>nd</sup> & 3<sup>rd</sup> year will be dumped at 5m height in out of lease area in north & north-west direction. Lateritic soil and inter-calculated waste will be dumped outside of the lease boundary at the height of the 6m in west direction.

**Table: 3-5 Details of year wise dump area of alluvial soil and lateritic soil are as follow:**

Year	Alluvial Soil Dump (at 5m height)		Lateritic soil dump (at 5m height)
	Dump Area in barrier zone (m <sup>2</sup> )	Dump Area in out of lease area (m <sup>3</sup> )	Dump area (m <sup>2</sup> ) out of lease area
(2013-14)	6,090.2	--	6,944.8
(2014-15)	2,704.72	7,759.08	11,045(7.5 m barrier zone)
(2015-16)	Nil	4,792.12	
(2016-17)	Nil	Nil	
(2017-18)	Nil	Nil	Nil
<b>Total</b>	<b>8,794.92</b>	<b>12,551.2</b>	<b>17,989.8</b>

**Table: 3-6 Dumping site of sub –grade material:**

Generated Sub-grade material volume in m <sup>3</sup>	Dump Height	Dump Area	Dump Location
22,245.89	6.0m	37,075m <sup>3</sup>	North west within the lease area

### 3.9.2. Selection of dumping site for Block-C:

The generated alluvial soil during first years will be dumped in 7.5 m barrier zone at 5m height for plantation and generated during 2<sup>nd</sup> and 3<sup>rd</sup> year will be dumped at 5m height in out of lease along the

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lease boundary. Laterite and generated inter-calculated waste will be dumped outside of the lease boundary at the height of 6m in south direction.

**Table: 3-7 Details of year wise dump area of alluvial soil and lateritic soil are as follow:**

Year	Alluvial Soil Dump (at 5m height)		Lateritic soil dump (at 5m height)
	Dump Area in barrier zone (m <sup>2</sup> )	Dump Area in out of lease area (m <sup>3</sup> )	Dump area (m <sup>2</sup> ) out of lease area
(2013-14)	6,140.88	Nil	25,661.12(7.5 m barrier zone)
(2014-15)	Nil	33,687.44	
(2015-16)	Nil	20,575.9	
(2016-17)	Nil	Nil	
(2017-18)	Nil	Nil	Nil
<b>Total</b>	<b>6,140.88</b>	<b>54,263.34</b>	<b>25,661.12</b>

**Table: 3-8 Dumping site of sub –grade material:**

Generated Sub-grade material volume in m <sup>3</sup>	Dump Height	Dump Area	Dump Location
32,303.25	6.0m	5,383.87m <sup>3</sup>	Eastern part of the lease area within the lease area

The application for the permission of the state Government has been enclosed as **Annexure-4**

### 3.10. Schematic representations of the feasibility drawing which give information of EIA purpose

As per the Environment Impact Assessment (EIA) notification dated 14<sup>th</sup> Sept. 2006 and amendment done so far, the proposal for expansion of mining lease & enhancement of production falls under

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category B. EIA/EMP report is required to get environmental clearance for this project from the MoEF. The baseline studies will be undertaken as per schematic diagram given as Fig 4.

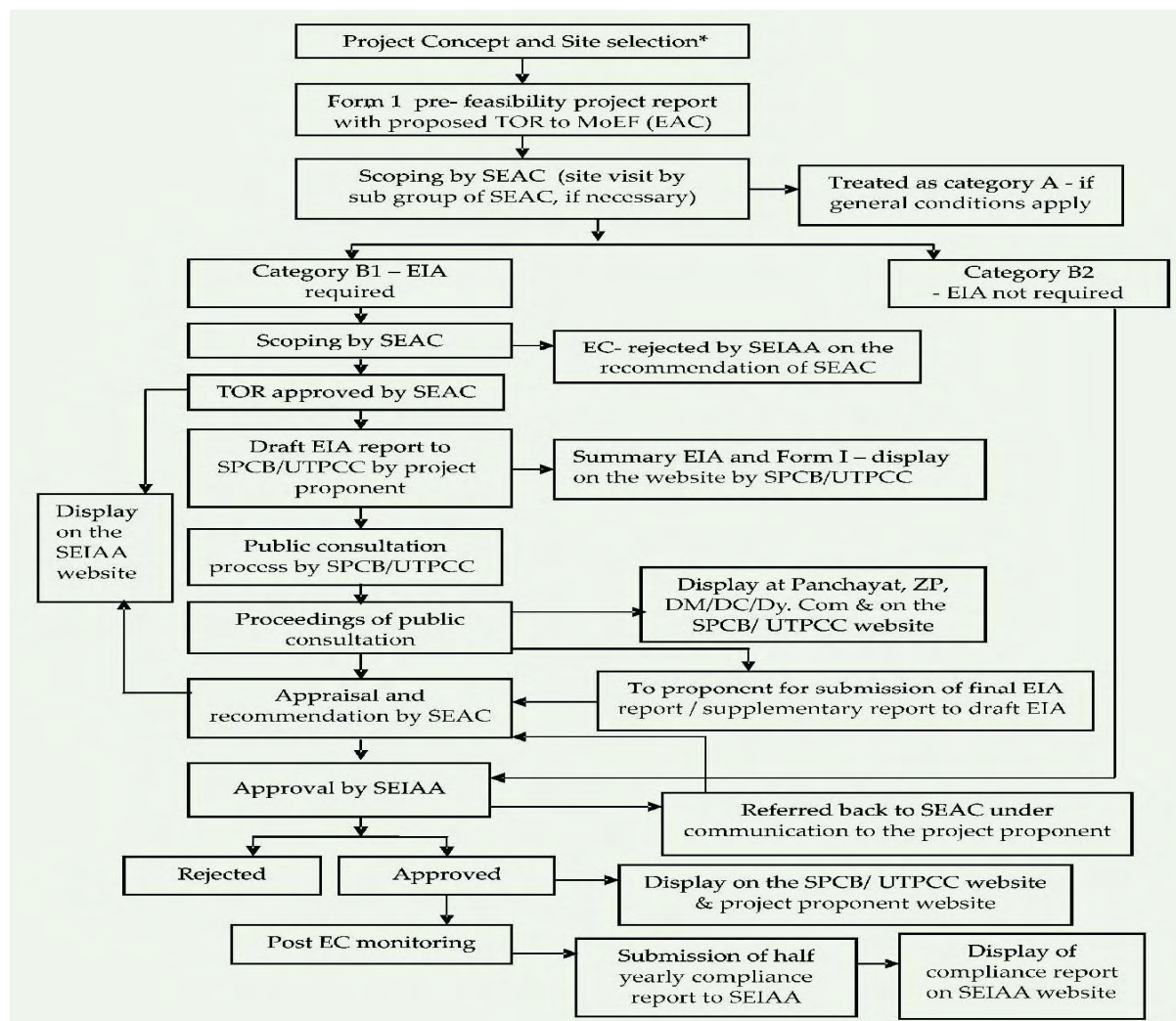


Figure 3.2:- Prior Environmental Clearance process for category B

(Source: EIA manual guideline for mining & minerals)

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### 4. SITE ANALYSIS

#### 4.1. Connectivity

The mine lease area is well connected with Road and rail transport. The area is connected with NH-100 (about 17km in W direction) through the metalled road. The nearest railway station is Baradwar Railway Station and which is 4 km of NW direction of the mine lease area. Raipur Airport is the nearest airport in respect of mine lease area.

#### 4.2. Land Form, Land use and Land ownership

The mine lease area is 42.754ha of govt. land which is a barren land not used for agriculture or the other purpose. The lease area is non forest land. The details of the land are given in below Table 4.1 & 4.2.

**Table Error! No text of specified style in document.-5:- Details of Land use of the Mine Lease Area**

Khasra no.	Area in hectare	Type of land	Ownership / Occupancy
2316/1,2322/1,2322/2,2333/5,2350/1, 2357/2,2358/1,2358/2	42.754	Waste land	Government Land

The land use pattern of the mine lease area is as under:

Table indicate break up of area an mining lease for calculation of financial assurance (in Ha)

**Table Error! No text of specified style in document.-6:- Land use Pattern of the Mine Lease Area**

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Sl. No.	Head	Area put on use at start of plan in ha (A)	Additional area requirement during plan period in ha (B)	Total area in ha C=A+B	Area considered as fully reclaimed & rehabilitated in ha (D)	Net area considered for calculation in ha (E)
1	Area to be excavated	3.469	8.058	11.527	Nil	11.527
2	Storage for topsoil	Nil	0.713	0.713	Nil	0.713
3	Overburden / dump	0.6148	0.0171	0.7858	0.2101	0.5757
4	Mineral storage	Nil	0.3947	0.3947	Nil	0.3947
5	Infrastructure (Workshop, administrative building etc)	0.0127	Nil	0.0127	Nil	0.0127
6	Roads	Nil	0.1671	0.1671	Nil	0.1671
7	Railways	Nil	Nil	Nil	Nil	Nil
8	Green belt	Nil	On top soil	On top soil	Nil	On top soil
9	Tailing pond	Nil	Nil	Nil	Nil	Nil
10	Effluent	Nil	Nil	Nil	Nil	Nil

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Sl. No.	Head	Area put on use at start of plan in ha (A)	Additional area requirement during plan period in ha (B)	Total area in ha $C=A+B$	Area considered as fully reclaimed & rehabilitated in ha (D)	Net area considered for calculation in ha (E)
	treatment plant					
11	Mineral Separation plant	Nil	Nil	Nil	Nil	Nil
12	Township area	Nil	Nil	Nil	Nil	Nil
13	Others to specify	Nil	Nil	Nil	Nil	Nil
<b>Total</b>		<b>4.965</b>	<b>9.3499</b>	<b>13.6003</b>	<b>0.2101</b>	<b>13.390</b>

**4.3. Topography (along with map)**

Topographically lease area may be considered as flat in nature. The area is not covered by any watercourses in the form of river, nallah etc. No permanent drainage course exists in the area.

**4.4. Existing land use pattern (agriculture, non-agriculture, forest, water bodies (including area under CRZ)), shortest distances from the periphery of the project to periphery of the forests, national park, wild life sanctuary, eco sensitive areas, water bodies (distance from the HFL of the river), CRZ. In case**



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**of notified industrial area, a copy of the Gazette notification should be industrial AREA; a copy of the Gazette notification should be given.**

The lease area is government waste land. There is no eco-sensitive zone/area present in study area.

### 4.5. Existing Infrastructure

One small mine office & rest shelter for the staff and worker are available in the mine lease area.

### 4.6. Soil Classification

The soil is alluvial and Lateritic in nature.

### 4.7. Climatic data from secondary sources

The climate of Chhattisgarh is tropical. It is hot and humid because of its proximity to the Tropic of Cancer and its dependence on the monsoons for rains. Summer in Chhattisgarh temperatures can reach 45 °C (113 °F). The monsoon season is from late June to October and is a welcome respite from the heat. Chhattisgarh receives an average of 1,429 mm of rain. Winter is from November to January. Winters are pleasant with low temperatures and less humidity.

#### 4.7.1. Climate Condition (30 years IMD Data)

The nearest IMD station for the proposed mine project is Raigarh and the meteorological data for IMD Raigarh is given in **Table 4.1**.

**Table Error! No text of specified style in document.-7:- Climatology and Meteorology of Study Region**

Sl. No.	Parameters	Description of the Season		
1	Rainfall in mm	Total Annual average is 1429.3 mm		
		Winter (Dec to Feb)	Months	Total rainfall (in mm)
			December	2.0
			January	14.5
			February	14.5
			Total	10.33

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Sl. No.	Parameters	Description of the Season				
		Summer (Mar to May)	March	17.6		
			April	12.8		
			May	38.8		
			Total	23.07		
		Monsoon (June to Sept)	June	204.3		
			July	399.3		
			August	441.9		
			September	234.0		
			Total	319.88		
		Post-Monsoon (Oct to Dec)	October	42.2		
			November	7.5		
			December	2.0		
			Total	17.23		
2	Temperature (Mean Daily Temp. in °C)	Winter (Dec to Feb)	Months	Max	Min	Avg
			Dec	30.5	13.2	21.85
			Jan	31.3	13.4	22.35
			Feb	35.0	16.3	25.65
			Average	32.27	14.3	23.28
		Summer (Mar to May)	Mar	40.1	20.7	30.4
			Apr	43.4	25.1	34.25
			May	45.3	27.7	36.5
			Average	42.93	24.5	33.72

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Sl. No.	Parameters	Description of the Season				
		Monsoon (June to Sept)	June	43.6	27.1	35.35
			Jul	36.0	25.0	30.5
			Aug	34.3	25.0	29.65
			Sep	34.9	24.7	29.8
			Average	37.2	25.45	31.325
		Post-Monsoon (Oct to Dec)	Oct	34.9	22.3	28.6
			Nov	33.1	17.9	25.5
			Dec	30.5	13.2	21.85
			Average	32.83	17.8	25.32
		3	Relative Humidity in per cent	Winter (Dec to Feb)	Month	8.30hrs
Dec	65				47	
Jan	65				46	
Feb	60				36	
Average	63.33				43	
Summer (Mar to May)	Mar			46		26
	Apr			39		22
	May			44		26
	Average			43		24.67
Monsoon (June to Sept)	Jun			64		51

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Sl. No.	Parameters	Description of the Season			
			July	83	75
			Aug	84	78
			Sep	80	74
			<b>Average</b>	<b>77.75</b>	<b>69.5</b>
		Post-Monsoon (Oct to Dec)	Oct	71	60
			Nov	64	51
			December	65	47
			<b>Average</b>	<b>66.67</b>	<b>52.67</b>
4	Wind-speed	Winter (Dec to Feb)	<b>Month</b>	<b>Speed (kmph)</b>	
			Dec	2.8	
			Jan	3.2	
			Feb	4.2	
			<b>Average</b>	<b>3.4</b>	
		Summer (Mar to May)	Mar	4.3	
			Apr	4.8	
			May	5.3	
			<b>Average</b>	<b>4.8</b>	
		Monsoon (June to Sept)	Jun	5.9	
			July	5.1	

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Sl. No.	Parameters	Description of the Season		
			Aug	5.1
			Sep	3.9
			<b>Average</b>	<b>5</b>
		Post-Monsoon (Oct to Dec)	Oct	3.3
			Nov	3.1
			Dec	2.8
			<b>Average</b>	<b>3.07</b>

Source: (i) Climatological Table 1971 – 2000, Indian Meteorological Department, Govt. of India

**Rainfall:** The annual average total rainfall recorded in the region was found to be 119.12.

**Temperature:** The average maximum temperature was recorded in the month of May at 45.3°C and the minimum temperature was 13.2°C in December.

**Relative Humidity:** The maximum Relative Humidity was found during the monsoon season with the month of August recording the highest average at 84%.

**Wind Speed and Direction:** The maximum average wind speed was found to be 5.9 kmph in the month of June.

### 4.8. Social Infrastructure Available

One small mine office & rest shelter for the staff and worker are available in the mine lease area.

The existing facilities in the proposed area are sufficient. All type of facilities such as Hospital, Educational Facilities and communication etc are available in the nearest village.

#### 4.8.1. Health and Educational facilities

The project involve land is government waste land and does not cover any habitation. The mining operation will not disturb / relocate any village or need resettlement. Following are the specific impacts:-

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- ❖ There will be positive impact in socio-economic area due to increased economic activities, creation of new employment opportunities, infrastructural development and better education and health facilities.
- ❖ The mine will generate new employment opportunity which will have beneficial impact. The initiation of this mine will generate both direct and indirect employment which will improve the local economy and will become a source of livelihood to the households of nearby villages. Hence the mining activity will contribute a lot to improve the living standards of the local people.
- ❖ Periodic medical checkups as per Mines Act/ Rules and other social development and promotional activities will be undertaken. All this will lift the general health status of the residents of the area around mines. Lease will undertake awareness program and community activities like health, camps, medical aids, family welfare camp, AIDS awareness program etc.
- ❖ Funds will be made available for repairs of the school in the buffer zone. The company will also support adult education programmes, gives scholarship and prizes in many fields to the students.
- ❖ In order to improve the educational activities in the area, following assistance may be provided.
  - Repair / Rebuilding of village schools;
  - Institution of scholarships and prizes;
  - Encouraging pre-primary schools education; and
  - Supporting adult education programs;

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### 5. PLANNING BRIEF

#### 5.1. Planning concept (type of industries, facilities, transportation etc) Town and country Planning/Development authority Classification

The state govt. has sanctioned Mining lease to the applicant M/S Star Ferro Alloys Pvt. Ltd. on dated 20-05-2002 for a period of 20 years only, i.e. 20.05.2002 to 19.05.2022 over an area of 42.754 ha and lease was transferred in the name of M/S Sri Balaji metals & minerals Pvt. Ltd. on dated 30.08.2005 for balance period of mining lease. The total mining lease area is 42.754 ha with mineral Dolomite. The total Geological (Category 121 & 122) reserve of 31.7958 million tons of Dolomite was estimated in the approved mining scheme and 22.3702 million tonnes were considered as mineable reserves. The area of mine lease is Private waste land. Open cast Mechanized mining method with drilling and blasting is the only suitable method of mining for such type of deposit. The mineral is sized according to the consumer's specification and stacked on the mine surface. The stacked Dolomite is transported by their own and hired trucks.

The working mining lease is located at a distance of 8 Km from Baradwar on the Mumbai-Hawda main rail line. Telephone line, bank, Govt. office and hospital are available at Baradwar. The mine lease area is well connected with Road and rail transport. The area is connected with NH-100 (about 17km in W direction) through the metalled road. The nearest railway station is Baradwar Railway Station and which is 4 km of NW direction of the mine lease area. Raipur Airport is the nearest airport in respect of mine lease area.

#### 5.2. Population Projections

The project will employ most of the workers from nearby villages. Only supervisory staff will be hired from outside. There will not be any increase in population due to the project. However, few people from other area may migrate in this area for business opportunities.

#### 5.3. Land Use planning (breakup along with green belt etc.)

Approximate land use is as following for present condition and plan period are given in below Table 5.1.

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**Table Error! No text of specified style in document.-8:- Details of land Use breakup**

Sl. No.	Head	Area put on use at start of plan in ha	Additional area requirement during plan period in ha
1	Area to be excavated	3.469	8.058
2	Storage for topsoil	Nil	0.713
3	Overburden / dump	0.6148	0.0171
4	Mineral storage	Nil	0.3947
5	Infrastructure (Workshop, administrative building etc)	0.0127	Nil
6	Roads	Nil	0.1671
7	Railways	Nil	Nil
8	Green belt	Nil	On top soil
<b>Total</b>		<b>4.965</b>	<b>9.3499</b>

### 5.4. Assessment of Infrastructure Demand (Physical & Social)

The road facility is already available which shall be used and properly maintained. Preference will be given to local labor from nearby villages. Other requisite infrastructure as transport of mine labours is available by way of jeep, two-wheeler. Medical facility is available for first aid at project site.

#### 5.4.1. Social Infrastructure

This project is providing employment to local people directly and some indirectly which are Shopkeepers, Mechanic, drivers and transporter.



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### **5.5. Amenities/ Facilities**

One small mine office and rest shelter for the staffs and the workers were constructed near working pit. Drinking water requirement for the project area are fulfilled by tube-wells. Power for mining site will be conducted from nearest village. First aid box with all necessary materials will kept all time in the office building for use as and when required.

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### **6. PROPOSED INFRASTRUCTURE**

#### **6.1. Industrial Area (Processing Area)**

A temporary rest shelter for labours was constructed at mine site.

#### **6.2. Resident Area (Non Processing Area)**

No residential area is proposed.

#### **6.3. Green Belt**

To improve the environment of the area it is proposed to plant 50 trees every year inside the area. Plantation will be carried out on statutory barrier & on backfilled area. The mining lease area will be covered for plantation up to the life of mine.

#### **6.4. Social Infrastructure**

This Project is providing employment to local people directly and indirectly. Indirect employers are shopkeepers, mechanic, drivers, transporters etc. The lessee will responsible for providing better social infrastructure benefits such as drinking water, health care measures, educational facilities, promotion of culture and religious activities in surroundings.

#### **6.5. Connectivity (Traffic and transportation Road/Rail/Metro/Water ways etc)**

The mine lease area is well connected with Road and rail transport. The area is connected with NH-100 (about 17km in W direction) through the metalled road. The nearest railway station is Baradwar Railway Station and which is 4 km of NW direction of the mine lease area. Raipur Airport is the nearest airport in respect of mine lease area.

#### **6.6. Drinking Water Management (Source & supply of water)**

Water requirement of about 3.11KLD will be met from the tube well.

#### **6.7. Sewerage System**

No sewerage system needs to require. Either mobile toilet van or Soak-pit will be provided of the project area.

## **PRE-FEASIBILITY REPORT**

FOR DUMARPARA DOLOMITE MINING PROJECT, VILLAGE– DUMARPARA  
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### **6.8. Industrial Waste Management**

#### **6.8.1. Solid waste Management**

The generated alluvial soil during first years will be dumped in 7.5 m barrier zone at 5m height for plantation and generated during 2<sup>nd</sup> and 3<sup>rd</sup> year will be dumped at 5m height in out of lease along the lease boundary. Laterite and generated inter-calculated waste will be dumped outside of the lease boundary at the height of 6m in south direction.

#### **6.8.2. Power Requirement**

Electric lines are passing within the lease area. During mining no electricity will be required. If need then it will be acquired nearby village. The method of mining is mechanized and power requirement is limited to office facilities and lighting of the project area.

## **PRE-FEASIBILITY REPORT**

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### **7. REHABILITATION AND RESETTLEMENT(R&R PLAN)**

#### **7.1. Policy to adopted (Central State) in respect of the project affected person including home outsees, land outsees and landless labour**

The mine area does not cover any habitation. Hence the mining activity does not involve any displacement of human settlement. No public buildings, places, monuments etc exist within the lease area or in the vicinity of the mine lease area. The mining operation will not disturb/ relocate any village or need resettlement. Thus no adverse impact is anticipated.

## PRE-FEASIBILITY REPORT

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### 8. PROJECT SCHEDULE AND COST ESTIMATES

#### 8.1. Likely date of start of construction and likely date of Completion (Time schedule for the project to be given)

It is a mining project which was allotted to M/S Sri Balaji metals and Minerals Pvt. Ltd. A total geological reserve 31.758 million Tonnes of dolomite was estimated in the approved mining Scheme and 22.3702 million Tonnes was considered as mineable reserves. The mine lease period has been approved from 20.05.2002 to 19.05.2022.

#### 8.2. Estimated project cost and along with analysis in terms of economic viability of them project.

Cost Analysis of Economic Viability of Mineral

##### 8.2.1. Value of Mineral

- ❖ Total Mineable reserve in the area: 22.3702 million Tonnes=22370200Tonnes
- ❖ The average sale value Rs.700 per tonne
- ❖ Total Saleable on value of mineral reserve is =  $22370200 \times 700 = \text{Rs. } 1565,91,40,000/-$

##### 8.2.2. Year Wise Production and Excavation Cost

- ❖ The Proposed Yearly Target production is about 3,40,393 T of Dolomite
- ❖ The average sale value of mineral is Rs. 700 per tonne.
- ❖ Thus Value of mineral is  $3,40,000 \times 700 = \text{Rs. } 23,82,75,100/-$  per year

##### 8.2.3. Mining Cost

- ❖ Thus total cost of mining is Rs. 600 per Tonne for mineral.
- ❖ Total cost per year will be  $3,40,393 \times 600 = \text{Rs. } 20,42,35,800/-$
- ❖ Net profit:  $23,82,75,100 - 20,42,35,800 = \text{Rs } 3,40,39,300$  per year.

The profit will depend upon the actual production obtained from the mine, which may vary due to demand in market.

## **PRE-FEASIBILITY REPORT**

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### **8.2.4. Population Benefited**

About 30 peoples including labors directly and other persons will be benefited indirectly.

### **8.2.5. Government Revenue**

The state Government will get revenue as royalty from selling of mineral, land tax/surface rent, sale tax/VAT, income tax etc will be addition.

## **PRE-FEASIBILITY REPORT**

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### **9. ANALYSIS OF PROPOSAL (FINAL RECOMMENDATION)**

#### **CONCLUSION**

The project is of utmost importance to the area/ region for interest of mineral development and improves the socio-economic conditions of the local habitants. The operation of the proposed expansion project will bestow various social and economic benefits to the local communities of the area in addition to the existing benefits due to provide better employment opportunities and improvement in social infrastructure of the area, apart from increased financial benefits accruing to state and central agencies by ways of taxes, royalties, cesses etc.