

**EXECUTIVE SUMMARY**  
**Of**  
**DRAFT**  
**ENVIRONMENTAL IMPACT ASSESSMENT**  
**AND**  
**ENVIRONMENTAL MANAGEMENT PLAN**  
**REPORT**  
**OF**  
**Karmanda Lime Stone (Low Grade) Mining Project**

**Village - Karmanda, Tehsil –Baloda, District – Janjgir -  
Champa, and State: Chhattisgarh**

**Area: 1.979 Ha,**

**proposed Maximum Production Capacity: 1,10,010 TPA**

**APPLICANT**

**M/s Pawan Stone Crushing Industries**

**Prop. - Dukhiram Rathor**

**Village- Biragahanee,**

**Tehsil: Janjgir,**

**District: Janjgir - Champa (Chhattisgarh)**

## 1.0 INTRODUCTION

Environmental Impact Assessment (EIA) is a process, used to identify the environmental, social and economic impacts of a project prior to decision-making. It is a decision making tool, which guides the decision makers in taking appropriate decisions for proposed projects. EIA systematically examines both beneficial and adverse consequences of the proposed project and ensure that these impacts are taken into account during the project designing.

The Environmental Impact Assessment Documentation has been prepared in terms of EIA notification of the MoEF dated 14-9-2006 and its subsequent amendments thereof and the EIA Guidance Manual for Mining of Minerals (Feb, 2010) of MoEF, Govt. of India, for seeking environmental clearance for mining in the existing area of Karmanda Lime Stone (Low-Grade) Mining measuring 1.979 hectares falling under category “B1” due to the order of Hon’ble NGT (PB), Ministry of Environment, Forest & Climate Change ( MoEF &CC), Govt. of India vide Office Memorandum F.No.J-13012/12/2013-IA-II (I) dated 24.12.2013.

### 1.1 Location of the Project

The mining area is located at Khasra No. 1032/2, 1035, 1034/1, 1036, 1032/3, 1033/2, 1034/2, 1038/2 Part, Village – Karmanda, Tehsil -Baloda, District – Janjgir-Champa, and State: Chhattisgarh.

**Table No. 1.1 Latitude & Longitude of Lease Area**

<b>Boundary Pillars No.</b>	<b>Latitude</b>	<b>Longitude</b>
A	22° 5'12.30"N	82°35'54.25"E
B	22° 5'13.17"N	82°35'54.09"E
C	22° 5'13.90"N	82°35'54.53"E
D	22° 5'14.15"N	82°35'54.31"E
E	22° 5'15.79"N	82°35'54.53"E
F	22° 5'15.79"N	82°35'57.00"E
G	22° 5'16.30"N	82°35'57.10"E
H	22° 5'16.65"N	82°35'57.44"E
I	22° 5'16.24"N	82°35'58.66"E
J	22° 5'17.01"N	82°36'0.17"E
K	22° 5'16.11"N	82°36'1.10"E
L	22° 5'14.78"N	82°35'59.51"E
M	22° 5'13.57"N	82°35'59.64"E
N	22° 5'13.31"N	82°35'59.29"E
O	22° 5'12.35"N	82°35'59.39"E
P	22° 5'12.21"N	82°35'59.22"E
Q	22° 5'11.78"N	82°35'59.18"E

**Table No. 1.2 Salient Features of Project**

<b>Project Name</b>	Karmanda Lime Stone (Low Grade) Mining Project .		
<b>Location of mine</b>	Village : Karmanda Tehsil : Baloda District : Janjgir-Champa State : Chhattisgarh		
<b>Area</b>	1.979 Ha		
<b>Geo-Coordinates</b>	<b>Boundary Pillars No.</b>	<b>Latitude</b>	<b>Longitude</b>
	A	22° 5'12.30"N	82°35'54.25"E
	B	22° 5'13.17"N	82°35'54.09"E
	C	22° 5'13.90"N	82°35'54.53"E
	D	22° 5'14.15"N	82°35'54.31"E
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	I	22° 5'16.24"N	82°35'58.66"E
	J	22° 5'17.01"N	82°36'0.17"E
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O	22° 5'12.35"N	82°35'59.39"E	
P	22° 5'12.21"N	82°35'59.22"E	
Q	22° 5'11.78"N	82°35'59.18"E	
<b>Khasra No.</b>	1032/2, 1035, 1034/1, 1036, 1032/3, 1033/2, 1034/2, 1038/2 Part		
<b>Minerals of mine</b>	Low Grade Lime Stone		
<b>Total Mineable reserves</b>	6,91,375 T		
<b>Life of mine</b>	6.28 years or say 7 years.		
<b>Max. Proposed production</b>	1,10,010TPA		
<b>Method of mining</b>	Open cast Semi Mechanized		
<b>No of working days</b>	300 days		
<b>Water demand</b>	Total water requirement is about 9.58 KLD = 1.26 KLD (Drinking & Domestic Uses) + 6.32 KLD (Plantation) + 2.0 KLD (Dust Suppression).		
<b>Sources of water</b>	Water Tanker		
<b>Man power</b>	30		
<b>Nearest railway station</b>	Champa-Junction - About 8.65 Km in SE direction.		

<b>Nearest airport</b>	Bilasa Devi Kevat Airport, Bilaspur - About 50.63 Km in WSW direction.
<b>Seismic zone</b>	Zone II

**Table 1.3: Environment Sensitivity**

<b>S.NO.</b>	<b>Particulars</b>	<b>Details</b>
1	Nearest Railway Station	Champa-Junction - About 8.65 Km in SE direction.
2	Nearest Airport/Airstrip	Bilasa Devi Kevat Airport, Bilaspur - About 50.63 Km in WSW direction.
3	Nearest School	Primary & Secondary School, Karmandi is about 0.64 km in WSW direction.
4	Nearest Hospital	CSPGCL Marwa Hospital is about 5.24 km in SSE direction.
5	Nearest Temple	Ma Kali Tendubhata Temple is About 1.22 km in SSW direction.
6	Built-up Area	Karmanda village is about 0.22 km in N direction.
7	Nearest National/State Highway	NH-149B is about 8.30 Km in ESE direction from the project site.
8	Ecological Sensitive Areas (Wild Life Sanctuaries) within 10km radius.	NA.
9	Reserved / Protected Forest within 10km radius (Boundary to boundary distance)	Reserve forest is about 6.90 km in N direction. Open mixed jungle is about 8.65 km in NNE direction.

**1.2 GREEN BET PLANT**

During the proposal period about 161 trees per year will be planted around the mining lease.

Area covered by afforestation is 7.5 sqm during conceptual period which will be rehabilitated providing plantation. Details of proposed plantation are mentioned below:

**Table 1.2**  
**TOTAL GREEN BELT PLAN**

पौधों की कुल संख्या - 1979				
अवस्था	प्रस्तावित वृक्षारोपण हेतु नियत स्थान	पौधों की प्रजातियां	पौधों की संख्या	टिप्पणी
प्रथम वर्ष	बैरियर जोन	नीम, करंज, बबूल, सिस्सू अर्जुन, जामुन, आम, कटहल, एवं अन्य स्थानीय प्रजातियां	161	<ul style="list-style-type: none"> <li>• पौधों से पौधों के बीच की दूरी 3 मी. एवं पंक्ति से पंक्ति की दूरी 2.5 मी. और गड्ढे का आकार 0.70मी. x 0.70मी. x 0.70मी. एवं गड्ढे में गोबर की खाद और शेष मिट्टी से भरा जाएगा।</li> <li>• परिनाली के निर्माण के दौरान निकली हुई मिट्टी में सबूबूल, नीम, बबूल, प्रोसोपिस और अन्य स्थानीय प्रजातियों के बीज बुवाई की जाएगी।</li> <li>• ट्रेंच 45 सेमी x 45 सेमी x 45 सेमी विकसित की जाएगी</li> <li>• तार की बाड़ की सुरक्षा के साथ।</li> </ul>
	गैर खनन क्षेत्र	नीम, करंज, बबूल, सिस्सू अर्जुन, जामुन, आम, कटहल, एवं अन्य स्थानीय प्रजातियां	400	<ul style="list-style-type: none"> <li>• पौधों से पौधों के बीच की दूरी 3 मी. एवं पंक्ति से पंक्ति की दूरी 2.5 मी. और गड्ढे का आकार 0.70मी. x 0.70मी. x 0.70मी. एवं गड्ढे में गोबर की खाद और शेष मिट्टी से भरा जाएगा।</li> <li>• सुरक्षा हेतु तार की बाड़ की जावेगी।</li> </ul>
	परिवहन मार्ग	नीम, करंज, बबूल, सिस्सू अर्जुन, जामुन, आम, कटहल, एवं अन्य स्थानीय प्रजातियां	400	<ul style="list-style-type: none"> <li>• परिवहन मार्ग के दोनों ओर एक पंक्ति में 4-5 फीट ऊंचाई पौधों के वृक्षारोपण किए जाएंगे।</li> <li>• पौधों से पौधों के बीच की दूरी 3 मी. एवं पंक्ति से पंक्ति की दूरी 2.5 मी. और गड्ढे का आकार 0.70मी. x 0.70मी. x 0.70मी. एवं गड्ढे में गोबर की खाद और शेष मिट्टी से भरा</li> </ul>

			जाएगा। • पौधों की सुरक्षा हेतु प्रभावशाली 6 फीट ऊंचाई का ट्री गार्ड।
ग्रामवासियों में वितरण हेतु	नीम, करंज, बबूल, सिस्सू अर्जुन, जामुन, आम, कटहल, एवं अन्य स्थानीय प्रजातियां	390	• ग्रामवासी इन पेड़ों को अपने खेतों की मेड़ पर लगाएंगे।
ग्राम पंचायत के सहयोग से ग्राम पंचायत के चिन्हित क्षेत्र में	नीम, करंज, बबूल, सिस्सू अर्जुन, जामुन, आम, कटहल, एवं अन्य स्थानीय प्रजातियां	340	• गड्ढे का आकार 0.70मी. x 0.70मी. x 0.70मी. एवं गड्ढे में गोबर की खाद और शेष मिट्टी से भरा जाएगा। • सुरक्षा हेतु तार की बाड़ की जावेगी।
ग्राम पंचायत के प्राथमिक शाला, आंगनवाड़ी एवं ग्राम पंचायत परिसर में	नीम, करंज, बबूल, सिस्सू अर्जुन, जामुन, आम, कटहल, एवं अन्य स्थानीय प्रजातियां	288	• गड्ढे का आकार 0.70मी. x 0.70मी. x 0.70मी. एवं गड्ढे में गोबर की खाद और शेष मिट्टी से भरा जाएगा। • सुरक्षा हेतु परिसर में बाउंड्री वाल की व्यवस्था है।
• दूसरे वर्ष से 5 वें वर्ष तक मृत पौधों का प्रतिस्थापन किया जाएगा।			
• रखरखाव एवं समस्त गतिविधियां द्वितीय वर्ष से पट्टा अवधि के अंत तक किया जाएगा।			

The following characteristics should be taken into consideration while selecting plant species for green belt development and tree plantation.

- They should be fast growing and tall trees.
- They should be perennial and evergreen.
- They should have thick canopy cover.
- Plantation should be done in appropriate alternate rows around the proposed site to prevent lateral pollution dispersion.
- The trees should maintain regional ecological balance and conform to soil and hydrological conditions. Indigenous species should be preferred.

### 1.3 BASE LINE DATA

This section contains the description of baseline studies of the 10 Km radius of the area surrounding “Karmanda Lime Stone (Low Grade) Mining Project”. The data collected has been

used to understand the existing environment scenario around the proposed mining project against which the potential impacts of the project can be assessed.

Environmental data has been collected in relation to propose mining for:-

- (a) Land
- (b) Water
- (c) Air
- (d) Biological
- (e) Noise
- (f) Socio-economic

#### **1.4 AMBIENT AIR QUALITY**

The results of AAQ are given in Annexure, the results when compared with National Ambient Air Quality Standards (NAAQS) of Central Pollution Control Board (CPCB) for "Residential, Rural and Industrial Areas" show that the average values of ambient air quality parameters are well within the stipulated limit.

The minimum and maximum level of PM10 recorded within the study area was in the range of 63.45  $\mu\text{g}/\text{m}^3$  to 86.22  $\mu\text{g}/\text{m}^3$ . PM2.5 recorded within the study area was in the range of 35.61  $\mu\text{g}/\text{m}^3$  to 56.61  $\mu\text{g}/\text{m}^3$ . The minimum and maximum level of SO2 recorded within the study area was in the range of 8.45  $\mu\text{g}/\text{m}^3$  to 16.18  $\mu\text{g}/\text{m}^3$ . The minimum and maximum level of NO2 recorded within the study area was in the range of 20.12  $\mu\text{g}/\text{m}^3$  to 30.64  $\mu\text{g}/\text{m}^3$ .

#### **1.5 NOISE ENVIRONMENT**

The result of Noise Quality at Night time Leq (Ln) varies from 40.4 to 46.4 dB (A) and the hourly daytime Leq (Ld) varies from 55.8 to 59.5 dB (A) within the study area. Low noise level is due to absence of any major industry in the area.

#### **1.6 WATER ENVIRONMENT**

The water quality in the impact zone was assessed through physico- chemical and bacteriological analysis of ground and surface water samples. The results have been compared with the drinking water quality standards specified in IS: 10500. It was observed that all the physico chemical parameters and heavy metals from surface and ground water samples are below stipulated drinking water standards.

All the ground water samples analyzed can be considered fit for drinking purpose in the absence of alternate sources.

Comparing the values of pH, DO, BOD and total coliforms with 'Use based classification of surface waters' published by Central Pollution Control Board; it can be seen that all the analyzed surface waters can be compared with class "B" and can be used as "Outdoor bathing (Organized)".

### **1.7 SOIL ANALYSIS REPORT**

Physical characteristics of soil were characterized through specific parameters viz bulk density, porosity, water holding capacity, pH, electrical conductivity and texture. Soil pH plays an important role in the availability of nutrients. Soil microbial activity as well as solubility of metal ions is also dependent on pH. In the study area, variations in the pH of the soil were found to be neutral (7.11 to 7.59). Electrical conductivity (EC) is a measure of the soluble salts and ionic activity in the soil. In the collected soil samples the conductivity ranged from 645-775 $\mu$ mhos/cm.

The soils with low bulk density have favorable physical condition where as those with high bulk density exhibit poor physical conditions for agriculture crops.

### **1.8 BIOLOGICAL ENVIRONMENT**

The lease area as well as buffer zone area reveals no endangered and endemic species of flora and fauna in the area.

### **1.9 WATER REQUIREMENT**

The total water consumption in the Mine is about 9.58 KLD. The water is used in the following purposes.

- For dust suppression & mining allied activity.
- For drinking & domestic consumption.
- For greenbelt development.

This water will be met from old bore well, hand pump and mine sump located in ML area.

The following table shows the water balance of the mine activity:



**Table No. 1.3****WATER CONSUMPTION (KLD)**

<b>Activity</b>	<b>Water requirement (KLD)</b>
Dust suppression	<b>2.00</b>
Domestic	<b>1.26</b>
Plantation	<b>6.32</b>
<b>Total</b>	<b>9.58</b>

**1.10 WASTE DUMP DISPOSAL**

Dumping of waste rock is not required.

**1.10.1 LAND FOR DISPOSAL OF WASTE WITH JUSTIFICATION:**

Not required as the available soil will be used to develop area for plantation; weathered waste/rejects will also be used in repair and maintenance of roads.

**1.11 SOCIO-ECONOMICS**

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. The mining operation will not disturb/ relocate any village or need resettlement. Thus no adverse impact is anticipated.

The impact of mining activity in the area is positive on the socio-economic environment of the region. Karmanda Lime Stone (Low Grade) Mining Project is providing employment to local population and it will be give preference to the local people whenever there is requirement of man power.

**1.12 OCCUPATIONAL HAZARDS AND SAFETY**

Occupational safety and health is very closely related to productivity and good employer-employee relationship. The factors of occupational health in Karmanda Lime Stone (Low Grade) Mining Project are mainly dust and land degradation. Safety of employees during operation and maintenance etc. shall be as per Mines rules and regulations.

To avoid any adverse effect on the health of workers due to various pollutants, sufficient measures relating to safety and health will also be practiced:

- Provision of rest shelters for mine workers with amenities like drinking water etc.
- All safety measures like use of safety appliances, such as dust masks, helmets, shoes, safety awareness programs, awards, posters, slogans related to safety etc.
- Training of employees for use of safety appliances and first aid in vocational training center.
- Regular maintenance and testing of all equipment as per manufacturers' guidelines.
- Periodical Medical Examination (PME) of all workers by a medical Officer
- First Aid facility is provided at the mine site.
- Close surveillance of the factors in working environment and work practices which may affect environment and worker's health.
- Working of mine as per approved mining plan and environmental plans.

### 1.13 ENVIRONMENTAL MANAGEMENT PLAN

The mining activities involve, excavation, loading, haulage and transportation of mineral. These activities lead to generation of air borne dust, which can cause air pollution in and around the mining lease area, if appropriate control measures are not taken. Similarly mining causes Land Degradation, Noise and Water Pollution etc. in the area.

In order to minimize impacts of mining on different environmental parameters and to keep air and water quality within prescribed limits of CPCB, a rapid Environmental Management Plan (EMP) is prepared to strictly follow it. This helps in resolving all environmental and ecological issues due to mining in the area. The environmental management plan includes all measures and safety precautions necessary for safe mining along with rehabilitation measures for mined out areas.

<b>ANNUAL EMP COST</b>			
<b>S NO.</b>	<b>Particulars</b>	<b>Budget Provisions (Rs)</b>	
		<b>Capital</b>	<b>Recurring</b>
1(a)	Overhead water sprinkling facility with solar pump for outgoing and incoming transportation vehicles for haul and transportation.	2,50,000	<b>30,000</b>
1(b)	Cost of Water own (4000 liter capacity) 2 tanker x 200 Rs./per day X 300 days	Nil	1,10,000
2	Four Settling Tank [ 2.5m (W) x 10m (L) 2m (D) ] Garland drain [ 643m (L) x 2m (W) x 1.5 m(D) ]	90,000	20,000
3	Prepare & Maintenance of approach road (Max. Road length 170 m , Width 6.0m) 170m @ 600Rs./Meter	1,02,000	30,000

4	Monitoring twice a year (Air , Water & Noise twice a year)	Nil	40,000
5	Plantation (1979 plants will be planted & Distribution during the five year) = 600 x 250/sapling	1,50,000	80,000
6	Grazing Land	40,000	10,000
7	Wire Fence 643 m x200	1,28,600	60,000
<b>Labour Welfare</b>			
8	Drinking Water Facility & Temporary rest shelter (25 x 15 feet)	40,000	4,000
9	Separate toilets for Male & Female No. of 2	25,000	20,000
10	Occupational health Survey 30 labour @ 500 Rs. = 10,500 Rs./twice per year @500 x 2 x 30	Nil	20,000
11	PPES to Work(Helmet shoes, gloves, goggle etc) , 30 labor @1200 Rs.	36,000	4,800
10	First Aid Kits , Number of kits 5	5,000	5,000
10	Fire Safety (1 nos.) , @ 30,000	30,000	2,500
<b>Solid Waste Management</b>			
a.	Bins 2 Nos.	1500	5,000
b.	Pit and Composed	5000	
c.	Transport of Dry Waste	5000	
11	Vehicle Maintenance + PUC Certification	Nil	25,000
12	Signage and Caution Board	5,000	1,000
<b>Total EMP Cost</b>		<b>9,13,100</b>	<b>4,67,300</b>

### 1.15 CONCLUSION

As discussed, it is safe to say that the project is not likely to cause any significant impact on the ecology of the area, as adequate preventive measures will be adopted to contain the various pollutants within permissible limits. Green belt development around the area will also be taken up as an effective pollution mitigates technique, as well as to control the pollutants released from the premises of the Proposed Mine.

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