/

I N T R O D U C T I O N

Langrapras Stone Quarry over an area of 1.21 hectares/3.0 acres in village Langrapras, Plot no. 22/Part, P.S. – Domchanch, Dist. – Koderma, Jharkhand and village Domchanch, Plot no. 6/Part, P.S. – Domchanch, Dist. – Koderma, Jharkhand is granted in favour of M/s Mahavir Stone chips, Prop – Sri Harsha Vardhan Pandey, for a period of ten(10) year from 01.04.2000 to 31.03.2010. (Copy of the lease deed including granted lease plan enclosed as **Annexure –I)**

Langrapras Stone Quarry of Sri Harsha Vardhan Pandey is located in survey of India Topo Sheet No. 72 H/11and bounded by Latitude: 24°29'15.09"N to 24° 29' 20.33" N & Longitude: 85° 39' 49.60" E to 85° 39' 54.87" E. The lease area is located at a distance of 8 kms on the north-east side of district head quarter Koderma. The National Highway (NH-33) is at a distance of 8 KM from the Lease area and State Highway is at a distance of 3 KM from lease area. The lease area is approachable from Ranchi through NH-33. The nearest Railway Station is Domchanch which is about a distance of 5 km from the lease area. The area around the project is of forest area.

The production target of the lessee is about 9500 Cum. per annum (Approx); the method of mining adopted is by opencast semi-mechanized method (OTFM).

The mining plan of Langrapras Stone Quarry of Sri Harsha Vardhan Pandey has been prepared under Rule 30 of Jharkhand Minor Mineral Concession (Modified) Rules, 2004 involving 3.00 acres or 1.21 Hectares of area in village Langrapras, Domchanch in Koderma district of Jharkhand and submitted to Director (Mines), Directorate of Mines & Geology, Department of Mines, Govt. of Jharkhand), Nepal house, Doranda, Ranchi for its approval.

****

/

1.GENERAL	
a) Name of the applicant	Sri Harsha Vardhan Pandey
Address	Village - Domchanch, P.O.- & P.S.- Domchanch
District	Koderma
State	Jharkhand
Pin Code	825418
Phone	08294959264
e-mail	-
b) Status of the applicant	Indivudual
c) Mineral(s) which are occurring in the area and which the applicant intends to mine	Stone
d) Period for which the mining lease is granted / renewed / proposed to be applied	Renwal application for Mining lease for stone for a period of 10 years is submitted. Copy of said letter is enclosed as **Annexure-II**
e) Name of the RQP preparing the mining plan	Sri B. B. Lall.
Address	1236/2, Lajpat Nagar, Near Lala Lajpat Rai School, Pundag, Argora, Ranchi, Jharkhand - 834004
Phone	0651- 2902588/2246412
Fax	0651- 2242513
e-mail	gems.projects@yahoo.in
Telex	-
Registration No.	RQP/RNC/140/2009/A

/

Date of grant / renewal	05th March 2009
Valid up to	04th March 2019
f) Name of the prospecting agency	Self (The stone is exposed throughout in the area and these exposures of stone prove that there is sufficient workable deposit of stone within the applied area. Therefore it is not required for further prospecting.)
g) Reference no. and date of consent letter from the State Govt.	

/

2. LOCATION AND ACCESSIBILITY

a) Details of area (with location map)	Langrapras Stone Quarry of Sri Harsha Vardhan Pandey is located in survey of India Topo Sheet No. 72 H/11and bounded by Latitude: 24°29'15.09"N to 24° 29' 20.33" N & Longitude: 85° 39' 49.60" E to 85° 39' 54.87" E. It is located in survey of India Toposheet No. 72H/11. (**Ref: Key Plan - Plate No. 1**).
District and State	Dist.- Koderma and State- Jharkhand
Taluka	Domchanch
Village	Domchanch & Langrapras
Khasra No./ Plot No./ Block Range / Felling Series etc.	Plot no. 22(Part) & 6 (Part)
Lease Area (hectares)	3.00 acre or 1.21 ha
Whether the area is recorded to be in forest (please specify whether protected, reserved etc.)	Entire area is Forest land and category of forest is village forest.
Ownership / Occupancy	Sri Harsha Vardhan Pandey
	The lease area is located at a distance of 8 kms on the north-east side of district head quarter Koderma. The National Highway (NH-33) is at a distance of 8 KM from the Lease area and State Highway is at a distance of 3 KM from lease area. The lease area is approachable from Ranchi through NH-33. The nearest Railway Station is Domchanch which is about a distance of 5 km from the lease area.

/

<table>
<tr>
<td>Toposheet No. with latitude and longitude</td>
<td>Topo Sheet No. 73 E/8 and it is bounded by 7 pillars. Pillar wise latitude and longitude is given below:
<table>
<tr><th>Pillar No.</th><th>Longitude</th><th>Latitude</th></tr>
<tr><td>BP1</td><td>85° 39' 51.48''</td><td>24° 29' 17.68''</td></tr>
<tr><td>BP2</td><td>85° 39' 49.62''</td><td>24° 29' 18.47''</td></tr>
<tr><td>BP3</td><td>85° 39' 49.60''</td><td>24° 29' 20.33''</td></tr>
<tr><td>BP4</td><td>85° 39' 52.40''</td><td>24° 29' 19.30''</td></tr>
<tr><td>BP5</td><td>85° 39' 54.87''</td><td>24° 29' 17.49''</td></tr>
<tr><td>BP6</td><td>85° 39' 54.49''</td><td>24° 29' 15.09''</td></tr>
<tr><td>BP7</td><td>85° 39' 52.20''</td><td>24° 29' 15.30''</td></tr>
</table>
</td>
</tr>
<tr>
<td>Land Use Pattern
(Forest, Agricultural, Grazing, Barren etc.)</td>
<td>Total 3.00 acres/1.21 Ha is forest land</td>
</tr>
<tr>
<td colspan="2">b) General location and vicinity map showing area boundaries and existing and proposed access routes is shown in the key plan as Plate No.1</td>
</tr>
</table>

****

/

PART - A

3.0 GEOLOGY AND EXPLORATION

a) Briefly describe the topographical and general geology and local geology of the mineral deposit including drainage pattern:

Physiography:

The lease for minor mineral is situated in village Langrapras, Plot no. 22/Part, P.S. – Domchanch, Dist. – Koderma, Jharkhand and village Domchanch, Plot no. 6/Part, P.S. – Domchanch, Dist. – Koderma, Jharkhand. The area is located in survey of India Toposheet No. 73 E/8**(Ref: Key Plan - Plate No. 1)** and bounded by 23°14'35.59"N to 23° 14' 44.67" N & Longitude: 85° 27' 23.60" E to 85° 27' 29.79" E. Topo Sheet No. 72 H/11and bounded by Latitude: 24°29'15.09"N to 24° 29' 20.33" N & Longitude: 85° 39' 49.60" E to 85° 39' 54.87" E. The lease area is located at a distance of 8 kms on the north-east side of district head quarter Koderma. The National Highway (NH-33) is at a distance of 8 KM from the Lease area and State Highway is at a distance of 3 KM from lease area. The lease area is approachable from Ranchi through NH-33. The nearest Railway Station is Domchanch which is about a distance of 5 km from the lease area. The area around the project is fully covered with Forest land.

The entire lease area is covered with hillocks and forests. Altitude of the area varies from 325m to 385m above mean sea level in general. There are many adjacent hillocks around the lease area having altitude above 400m above mean sea level. The topography of the Lease area over 1.21 hectares is on hill with steep undulation. The general slope of the lease area and surrounding is almost south-west side. The area is of forest land.

No river or nallah is passing through the lease area. The hill with steep slopes serves the main drainage of this area. The topographical features are shown in **Key Plan as Plate -1**

/

GEOLOGY:

General Geology:

The district koderma, which lies southern part of Jharkhand state, is underlain by Chotanagpur granite gneiss of pre-Cambrian age in three-fourth of the district. The other geological formations of the district are as follows:-

In Domchanch blocks thick lateritic capping is placed above granite gneiss. A big patch of older alluvium is found in Domchanch & lsngrapras block extending in East –West directions

The stratigraphic sequence of Ranchi is as follows:-

Age	Lithology
Quaternary	Older Alluvium, sand, slit & gravel
Pliestocene	Laterite
Carboniferous	Sandstone, Shale
Pre-Cambrian	Quartzite, Schist, Limestone, Shale,
Archean	Metabasic rocks, Gneissic complex

Local geology:

The geology of the Langrapras stone deposit follows the Regional stratigraphy of this region. The area is a part of Chhotanagpur Plateau and the geological formation of the lease area comprises mainly rocks of Archaean age with compact deposits.The area represents hill topography and the stones are exposed on the surface throughout the area. The trend of the stone deposit is almost E-W. Therefore, there is no requirement of any further prospecting within the lease area.

On the basis of geological field study, a geological map, which has been prepared with a contour interval of 5 m showing all features of geology. **(Refer Plate – 4).**

/

The local geological succession of rocks in the area as observed during field study is as below,-

Wethered Soil - 0.0m

Stone- continued

b) <u>The Topographic plan of the lease area prepared on a scale of 1:1000 or 1:2000 with contour interval of 3 to 10 m depending upon the topography of the area should be taken as the base plan for preparation of geological plan. The details of exploration already carried out including evidences of mineral existence should be shown on the geological plan.</u>

In view of the above the Surface Geological plan has been prepared on a scale of 1:1000 with contour interval of 5 m. The detail of Geological survey work carried out including evidence of stone existence has been shown on the Geological Plan **(Plate – 4)**.

c) <u>Geological sections should be prepared at suitable intervals on a scale of 1:1000.</u>

Geological sections from Lease boundary to lease boundary have been prepared on a scale of 1:1000 and shown in **Plate – 4**.

d) <u>Broadly indicate the year wise future programme of exploration, taking into consideration the future production programme planned in plan period as in table below:</u>

No exploration has been chalked out at this stage as the entire area is covered with stone exposure.

/

e) Indicate Geological and Recoverable Reserves and Grade, duly supported by standard method of estimation and calculations along with required sections (giving split up of various categories i.e. proved, probable, possible). Indicate cut-off grade. Availability of resources should also be indicated for the entire lease hold.

Estimation and calculations of the reserve:

The mineral resources & reserves have been estimated during the preparation of this mining plan. The resources have been estimated on the basis of the data observed directly from surface exposure. The existing exposure within the lease provides the data of mineralization. Stone exposed in the lease are considered as proved zone the average dimension of the mineral body is as follows:

Avg. length(m)	Avg.width (m)	Depth (m)	Depth in mRL	
			Top	Bottom
170	65	50	380	330

The following basic parameter has been considered for estimation of reserve of stone in the ML area.

1. Recovery factor (overall) - 98%
2. Tonnage factor- 2.30 MT/cum
3. Generation of sub grade nil
4. Generation of waste- nil

Method of Reserve Estimation:

Considering the above parameters, the different categories of geological reserve have estimated by cross sectional area method as follows.

GR=A x Lx RF x TF Where

GR- Geological Reserve (MT)

A- Cross sectional Area (sq.m)

L- Length of influence (m)

RF- Recovery Factor (MT/cum)

TF- Tonnage factor (MT/cum)

The mineral reserve has been arrived by excluding the area blocked under the safety barrier (7.5 m from lease boundary). However, the summaries of geological and mineable reserves have been estimated and tabled below.

Reserve Estimation

MINERAL RESOURCES & RESERVES

Proved Thickness - Thickness of the stone body as observed in base of field has been considered under proved depth. The max proved depth has been considered in section bottom R.L. is 330 m. No further influence has been considered from the existing litho-line. This is considered up to pit limit.

Probable Thickness - For estimation of indicated resources, further 5m in depth from proved zone has been considered

Possible Thickness - For estimation of indicated resources, further 5m in depth from probable zone has been considered.

The Proved zone is demarcated in Geological Plan and Sections **(Plate – 4)**. The detailed calculations for reserves are given in Table separately

MINERAL RESERVES:

Table-I: Geological Reserve of Stone (Proved)

Section	Cross section area	Length of influence	Volume in Cum.
A-A^{I}	**2650**	**100**	**265000**
B-B^{I}	**1150**	**70**	**80500**
		Total	**345500**

Table-II: Geological Reserve of Stone (Probable)

Section	Cross section area	Length of influence	Volume in Cum.
A-A^{I}	**440**	**100**	**44000**
B-B^{I}	**225**	**70**	**15750**
		Total	**59750**

Table -III: Geological Reserve of Stone (Possible)

Section	Cross section area	Length of influence	Volume in Cum.
A-A^{I}	**440**	**100**	**44000**
B-B^{I}	**225**	**70**	**15750**
		Total	**59750**

Cut-off grade:

Not applicable (as stone is raw material used in roads & building).

Recovery:

The fully exposure of the stone body is on the surface, therefore, the recovery is considered as 100% without considering any mining loss.

Conversion factor:

For stone - 1 cum = 2.3 MT.

CLASSIFICATION OF RESERVE AS PER UNFC SYSTEM:

UNFC system has been adopted to categorize the mineral Resources and reserves. For the estimation of different mineral reserves, Occurrences of mineral of intrinsic economic interest, location, grade, quantity, geological characteristic etc. has been studied in detailed and are given hereunder:

/

i) Proved Mineral Reserve (111):

Detailed geological survey has been carried out and exposures have been found on the surface. On that basis the proved reserve has been estimated based on the actual thickness of the stone body as exposed in lease area. Thus, geological axis can be brought under Geological axis (G1). The area is in forest and well-connected road. Environmental clearance has not been obtained. Manpower/machine requirement has been estimated based on actual need. Infrastructure resources are already available. The stone of this area is commercial as to the demand of buyers. Thus, the reserve can be brought under Feasibility (F1). On economic front, the end use, land use pattern, working plan is already known or designed, thus, the reserve can be brought under Economic (E1). Thus proved reserves can be classified under 111 groups.

ii) Probable Mineral Reserve (122):

As the floor and side walls of the existing pits is in deposit zone, a further influence up to 325 m R L depth has been considered. This extension of the stone body is kept under probable category assuming that the ore body may continue further. The geological axis can be brought under G2. On feasibility axis, there will be no displacement but environmental clearance has not taken. Thus, the reserves can be brought under F2. On the economic front, based on present scenario of market and infrastructure of area and grade of the stone from this area shall be utilized in lessee's own crusher. Hence it can be grouped under E1. Hence it can be grouped under E1. Thus probable reserve can be classified under 122 groups.

iii) Inferred Mineral Reserve (333)

As the floor and side walls of the existing pits is in deposit zone, a further influence up to 320 m R L depth has been considered. This extension of the stone body is kept under possible category assuming that the ore body may continue further. But it is found that the stone available is not fully confirmed. The present market scenario this stone is not profit marketable due to expensive cost of mining, so we keep it in E3. It also found that the quality of stone deposit is gradually low in depth wise and the seepage of water is more so we keep it G3 and F3 category, thus inferred can be classified under 333 groups.

The estimated mineral reserve is given in **Table- 4**

Table -4

PRESENTATION OF MINERAL RESOURCES AS PER UNFC

	CATEGORY	CODE	QUANTITY IN Cubic meter
Total Resources	(A+B)	-	465000
A Reserved	Proved	(111)	345500
	Probable	(122)	59750
		(121)	
B Remaining Resources	Feasibility Mineral Resources	(211)	-
	Pre-feasibility Mineral Resources	(222)	-
	Measured Mineral Resources	(331)	-
	Indicated Mineral Resources	(332)	-
	Inferred Mineral Resources	(333)	59750
	Reconnaissance Mineral Resources	(334)	-

ii) Estimation of Recoverable reserves and life of the mine:

Recoverable reserves:

(a)The total reserves (stone):405250Cum.

(b)Mining loss (stone of the total reserves): Nil %

(c)Recoverable reserves (stone): 405250Cum.

/

From the above Table, it is clear that total recoverable stone from the area is 405250Cum Cubic meter. So taking the maximum production target of 10000 Cubic meter per year, the life of the mine will be 405250/10000= 40.52 years.

Grade of stone deposit :– Road grade**.**

****

4.0 MINING

a) Briefly describe the existing / proposed method for developing /working the deposit with all design parameters.

The method of mining in this lease area will be opencast semi-mechanized mining, from where the stone will be excavated with deployment of excavator (bucket capacity 0.9 cum), jack hammer and compressor will be used at the time mining with combination of 10 ton truck/dumper capacity. Drilling and blasting will be carried out by engaging authorized explosive agency under competent supervision. Height of the bench will be maintained at 3m with a slope of angle about 45°. Width of the bench will be 3 meter in height of the bench. During mining operation all the rule and regulations like 'Metalliferous Mines Regulation 1961 framed under the Mines Act' will be followed. Jack hammer will be used for drilling in the productive benches for blasting purposes and depth of the drill hole will be done up to the depth of 3.0m with the diameter of 25.4mm. The holes will be charged with class- III (Special Gelatin 80% strength) and class–vi explosive (detonator/ Electric detonator and safety length) will be used in the mine. The run-of-mine (ROM) will be transported by 10t capacity truck/dumper to a crushing plant which is located outside the lease area towards south directions at a distance of 3 km. It is proposed to operate the mines on a single shaft basis.

The production was achieved during last five years has given below:-

Sl. No.	Year	Production(Cu. Mt)
1	2005-06	5918
2	2006-07	1664
3	2007-08	1923
4	2008-09	3783

/

5	2009-10	1478
	Total	**17766**

b) Indicate quantum of development and tonnage and grade of production expected pit wise as in table below:-

Proposed Year wise development & programme: **Table -4.1**

YEAR	Section Considered	Cross Section area	Length of influence	Volume in Cum
1st year	A-A^{I}	83	100	8300
2nd year	A-A^{I}	87	100	8700
3rd year	A-A^{I}	93	100	9300
4th year	A-A^{I}	97	100	9700
5th year	A-A^{I}	98	100	9800
			Total	**45800**

YEARWISE DEVELOPMENT & PRODUCTION PROGRAMME

Quantum of year wise proposed production working and generation of waste including stripping ratio is given in table no.4.2:-

Table -4.2

Table showing five years production, generation of O/B & Intercalated waste and stripping ratio for the five years of the plan period.

Year	Production of stone (ROM)		O/B in cum	Generation of I*/waste in cum	Total Waste in Cum	Actual Production in Cum	Stripping ratio m^3/t
	Cum	MT					
1st year	8300	19090	--	--	--	8300	1:0
2nd year	8700	20010	--	--	--	8700	1:0
3rd year	9300	21390	--	--	--	9300	1:0
4th year	9700	22310	--	--	--	9700	1:0
5th year	9800	22540	--	--	--	9800	1:0
Total	45800	**105340**	**--**	**--**	**--**	45800	

FIRST YEAR

In this year first of all, necessary mining road will be made for the movement of machinery etc. and then gradually development of benches will be done. During this year about 83 m^2 areas will be developed at the northern side of the lease area from the existing quarry limit on surface by developing two benched for regularize of the high rise bench as developed during last mine working. The height & width of bench shall be 3 meter each. During the 1st year mining, the working quarry will be started from the RL 385m to 380 m. (For other details please refer table 4.2 and shown in **plate no.5.**

Total production: Stone 8300 Cum.

Grade: Road grade.

/

SECOND YEAR

In this year about 87m^2 area will be developed by developing two benches from the end of quarry floor of first year working including regularize of the high rise bench as developed during last mine working. The height & width of bench shall be 3 meter each. During the 2nd year of mining, the working quarry will be started from the RL 380m to 375 m and move in depth from 1st year working quarry limit. (For other details please refer table 4.2 and shown in plate no.6.

Total production: Stone 8700Cum.

Grade: Road grade.

THIRD YEAR

In this year about 93m^2 area will be developed by developing three benches from the end of quarry floor of second year working including regularize of the high rise bench as developed during last mine working. The height & width of bench shall be 3 meter each. During the 3rd year of mining, the working quarry will be started from the RL 375m to 365 m and move in depth from 2nd year working quarry limit. For other details please refer table 4.2 and shown in **plate no.7.**

Total production: Stone 9300 Cum.

Grade: Road grade.

FOURTH YEAR

In this year about 97m^2 area will be developed by developing four benches from the end of quarry floor of third year working including regularize of the high rise bench as developed during last mine working. The height & width of bench shall be 3 meter each. During the 4th year of mining, the working quarry will be started from the RL 365m to 345 m and move in depth from 3rd year working quarry limit. For other details please refer table 4.2 and shown in **plate no.7.** For other details please refer table 4.2 and shown in **plate no .8.**

Total production: Stone 9700 Cum.

/

Grade: Building and road grade.

FIFTH YEAR

In the fifth year of plan period about 98m^2 area will be developed by developing five benches from the exiting surface level on southern side of quarry including regularize of the high rise bench as developed during last mine working. The height & width of bench shall be 3 meter each. During the 5th year of mining, the working quarry will be started from the RL 365m to 348 m and moving in depth from the exiting quarry level of last working quarry limit. For other details please refer table 4.2 and shown in **plate no.7.**

(For other details please refer table 4.2 and shown in **plate no .9.**

Total production: Stone 9800Cum.

Grade:- Road grade.

c) Attach year wise development plan and year wise sections:-

Five year development plan and section are enclosed as **Plate – 5 to 9.**

d) Attach supporting composite plan and section showing pit layouts, dumps, stacks of mineral, if any, etc.

Pit layout has been shown in development plan as mentioned above plate numbers and there is nil generation of waste during this plan period.

e) Indicate proposed rate of production when the mine is fully developed, and the expected life of the mine and the year from which effected.

Recoverable reserves:

(a)The total reserves (stone): 405250Cum.

(b)Mining loss (stone of the total reserves): Nil

(c)Recoverable reserves (stone): 405250Cum.

/

From the above Table, it is clear that total recoverable stone from the area is 405250Cum. So taking the maximum production target of 10000 Cubic meter per year, the life of the mine will be 405250/10000= 40.52 years.

f) Attach a note furnishing a conceptual mining plan for the entire lease period based on the geological mining and environmental considerations.

i) Exploration programme:

No exploration has been chalked out at this stage as the entire area is covered with stone exposure.

ii) Disposal of waste rocks and in saleable mineral:

Waste dump:

It can be seen from the development programme that there will be no generation of waste during this plan period. Therefore establishment of waste dump is not required

iii) Land Use Pattern:

Existing Land use:

This is a working mine where approach to mine i.e mine roads are developed within the lease area. At present about 0.022 ha area has been covered by roads. So, existing land use pattern is as follows.

/

EXISTING LAND USE PATTERN

Sl. No.	Pattern of land use	Area in Hectare
1	Quarry/pits	0.32
2.	Old Dumps	-
3.	Road	0.022
	Total	0.342

Land use at the end of plan period:

Total 0.77 ha area shall be used due to mining and allied activities by the end of the plan period.

Land use at conceptual stage: This has been shown in Conceptual plan & Sections. It has been calculated that total 0.92 ha area will be in use due to excavation.

iv) Reclamation & Rehabilitation:

As stated earlier the generation of waste is nil. Based on the present deposition zone, this area is going to be exhausted after 40 year. The excavated area shall be left which can be used as water Reservoir for Rain water Harvesting, the water of which be utilized by local people for their domestic purpose.

Existing position: No reclamation is observed during the site visit. This is the existing position of the lease area.

/

Reclamation at the end of plan period:

There is no proposal of reclamation of any pit during this plan period due to the reason stated above. Only plantation along the safety zone in the north east portion of the lease area is proposed to be carried out.

Reclamation at conceptual stage:

As stated earlier the generation of waste is very less and it will be utilized for the maintenance and making of mine road and surroundings etc. Based on the present deposition zone, this area is going to be exhausted after 40 year. The excavated area shall be left which can be used as water Reservoir for Rain water Harvesting, the water of which be utilized by local people for their domestic purpose.

vi) Afforestation:

The detail of plantation proposed during this plan period is given in Chapter – 11.

The existing land use, land use at the end of plan period and at ultimate stage is given in table below:

PRESENT AND FUTURE LAND USE PATTERN

Pattern of Utilization	Existing Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry/pits	0.32	0.45	0.84
Road	0.022	nil	0.022
Infrastructure	--	0.01	0.01
Plantation in safety zone(Green Belt)	--	0.2	0.34
Total	**0.342**	**0.66**	**1.21**

g) Opencast mines

i) Describe briefly giving salient features of the mode of working (mechanized……., semi-mechanized……., manual……)

The method of mining in this lease area will be opencast semi-mechanized mining, from where the stone will be excavated with deployment of excavator (bucket capacity 0.9 cum), jack hammer and compressor will be used at the time mining with combination of 10 ton truck/dumper capacity. Drilling and blasting will be carried out by engaging authorized explosive agency under competent supervision. Height & width of the bench will be maintained at 3m with a slope of angle about 45°. Width of the bench will be not less than the height of the bench. During mining operation all the rule and regulations like 'Metallifferous Mines Regulation 1961 framed under the Mines Act' will be followed. Jack hammer will be used for drilling in the productive benches for blasting purposes and depth of the drill hole will be done up to the depth of 3.0m with the diameter of 25.4mm. The holes will be charged with class- III (Special Gelatin 80% strength) and class–vi explosive (detonator/ Electric detonator and safety length) will be used in the mine. The run-of-mine (ROM) will be transported by 10t capacity truck/dumper to a crushing plant which is located outside the lease area towards south at a distance of 2 km. It is proposed to operate the mines on a single shaft basis.

ii) Describe briefly the layout of mine working, the layout of faces and sites for disposal of overburden/waste. A reference to the plans enclosed under 4(b) and 4(d) will suffice:

Layout of faces: All the benches of height 3m will be maintained in stone deposit zone and width of the bench will not less than the height. Overall pit slope will be 45°. Proper ramp are being provided in each bench for lifting of stone from quarry. Drilling & blasting is required to be performed in this type of mining. ROM Stone from quarry is loaded into truck and dispatch at destination of the crusher point. A proper mine road / ramp of width about 3

m will be maintained in the lease area for easy transportation of ROM stone etc. Details of layout of mine working have been illustrated in Plate 5 to 9.

h) Underground Mines: Not applicable.

a) Extent of Mechanization:

Extent of mechanization: - Describe briefly including the calculation for adequacy and type of machinery and equipment proposed to be used in different mining operations.

i) CALCULATION FOR REQUIREMENT OF EXCAVATOR.

The Excavator will be backhoe type with 0.9 cum bucket capacity with combination of tippers of 10MT (4.5 cum) capacity.

a) Bucket fill Capacity = 0.9 cum

b) Effective capacity of the Bucket = 0.81 cum

c) Capacity of the dumper = 4.5 cum

d) Effective capacity of the dumper of 0.9 factor = 4.05 cum

e) No. of bucket require to fill a bucket = (4.05/0.81) = 5

f) Average cycle time for excavation, loading of material to a tipper = 6 minutes.

g) Average utilization of time per shift with 80% utilization factor = 300 minutes.

h) Number of cycle per shift = (300/6) = 50.

/

i) Average excavation, loading capacity of

Excavator per shift = (50 x 4.05) = 202.5 cum

j) Total working day in a year = 230 days

K) Total Excavation and Loading capacity = 46575 cum.

Year	**1st year**	**2nd year**	**3rd year**	**4th year**	**5th year**
Year-wise quantity of material to be excavated and loaded. (cum)	8300	8700	9300	9700	9800
No. of working excavator required	1	1	1	1	1

From the above table it is clear that one excavator is required.

ii) CALCULATION FOR REQUIREMENT OF DUMPERS FOR DESPATCH OF STONE FROM MINE TO CRUSHER UNIT.

For stone Transportation:

The ROM will be despatch to the crusher unit for crushing by dumper. For this, dumpers are required. The detailed calculation is given hereunder:

a) Average Hauling distance both way (2km x 2) = 4km.

b) Average traveling time both way @ 30 kmph = 8 minutes (avg)

c) Average Loading time = 6 minutes

d) Average un-loading time = 2 minutes

/

e) Average cycle per trip = 16 minutes

f) Effective working time per shift with 80% utilization factor = 336 minutes

g) Average no. of trips per shift per dumper = 336/16 = 21nos.

h) Carrying capacity of the Dumper = 4.35 cum

i) Hauling capacity of dumper per shift = 91.35 cum

j) Hauling capacity of dumper per shift per annum = 21010.5 cum

Year-wise requirement of dumpers for stone boulder transportation

Years	1st year	2nd year	3rd year	4th year	5th year
Year-wise quantity of stone to be transported. (cum)	8300	8700	9300	9700	9800
No. of Dumpers required	1	1	1	1	1

From the above table it is clear 1 dumper is required.

iii) Drilling:

Jack-hammer will be used for drilling in the productive benches for blasting purposes and depth of the drill hole will be done up to the depth of 3.0m with the diameter of 25.4mm. The holes will be charged with class- III (Special Gelatin 80% strength) and class–vi explosive (detonator/ Electric detonator and safety length) will be used in the mine. The run-of-mine (ROM) will be transported by 10t capacity truck/dumper to a crushing plant which is located outside the lease area towards south-west at a distance of 2 km. In this type of deposit, no fixed pattern of blasting shall be done. Besides drilling and blasting, rock breaker will also be used for size reduction.

The following machines are proposed to be deployed to carry out mining operation in this mine.

/

Sl. No.	Particulars of Machine	Nos	Purpose
1	Excavator cum loader bucket capacity – 0.9 cum	01	Excavation & development of faces
2	Jack – hammer	1	Drilling / blasting
3	Compressor	1	For Jack – hammer
4	Rock Breaker	01	For breaking of boulders
5	Tippers - 10 MT	1	Transportation
6	Water sprinkler	01	For water spraying on haul road to control air pollution.

b) Transport from mine head to the destination (crusher point):-

The excavated stone material have been taken out from the pit head to destination i.e. crusher point located outside the lease area towards south-west will be transported by own dumpers as well as hired dumpers as required time to time.

iv) Loading equipment:

Excavator cum loader with size of bucket 0.9 cum will be deployed at the time of mining operation and 10 ton capacity of dumpers will be deployed for transporting the excavated ROM stone from mine head to crushing unit

v) Miscellaneous:

Describe briefly and allied operations and machineries related to the mining of the deposit not covered earlier:

There is no allied operation.

****

5.0 BLASTING

Describe briefly:

a) Broad blasting parameters like charge per hole, blasting pattern, charge per delay, maximum number of holes blasted in a round, manner and sequence of firing, etc.

For fragmentation and dislodging the hard stone, blasting is required. For this, drilling hole and blasting method is proposed to be adopted in the mine. The drilling hole will be made by Jackhammer driven by air compressors. Jack-hammer will be used for drilling in the productive benches for blasting purposes and depth of the drill hole will be done up to the depth of 3.0m with the diameter of 25.4mm. Not more than 10 holes will be fired in one round. However, regular blasting is not required. Large sized boulders will be excavated by using hydraulic Excavators which will be reduced in size by drilling blasting as well as by using hydraulic rock breakers.

i) Specification of Jack-hammer Drill

*	Diameter of the drill rod	-	25.4 mm
*	Consumption of compressed air	-	2-2.5 cum/min
*	Pressure supplied up to	-	6 kgf/sq.m

ii) Holes Required per Day:

Requirement of hole per day is not specific. Both rock breaker and blasting will do as per requirement.

b) Type of explosive used/to be used:

To carryout blasting operation, Class-III (special gelatine 80% strength) and Class-VI explosive (detonator and safety fuse of standard length) will be utilized in the mine.

c) Whether secondary blasting is needed, if so describe in brief:

Not applicable.

d) Storage of explosives (like capacity and type of explosive magazine):

The lessee having valid license to store explosive.Descrition of Storage capacity of explosive is as follows-

No	Explosive	Class	Div	Sib div	Capacity at a time	unit
1.	Nitrate mixture	2	0	0	50	kg
2.	Saftey fuse	6	1	0	2000	mts
3.	Detonators	2	3	0	1000	Nos

(Copy of said licenses is annexed with this report)

e) Precautions to be observed during drilling and blasting:-

All the necessary precautions such as hoisting of red flag at a safe distance, alarming the people by whistling and shouting will be taken before blasting. A qualified blaster having blasters certificate will do blasting. Delay blasting will be done to control flying rock particles to avoid effect of blasting on nearby agricultural fields.

****

6.0 MINE DRAINAGE:

a) Likely depth of water table based on observations from nearby wells and water bodies.

Topographically, the area is on hill with steep undulations. The highest altitude of the area is 385mRL and the lowest elevation of 330mRL. During the field study, the surrounding wells and tube well of the area are also studied and it was observed that the water level is at a depth below 80 m respectively from surface. So, there is no chance of intervene the water body.

b) Workings expected to be…….m above/reach below water table by the year…….

The top, bottom and ultimate working RL in the area are as follows:

Surface RL (in m)	Ultimate working RL (in m)	Ultimate working depth (in m)
385	330	55

From the study of the ground water table of the area it is noticed that water table of the locality likely not to be encountered during the proposed 5 years of work.

/

c) Quantity and quality of water likely to be encountered, the pumping arrangements and places where the mine water is finally proposed to be discharged.

Question of encountered of water due to seepage and its pumping arrangement does not arise due to the reason mentioned above. However in rainy season water will accumulate in the quarry for this water pump will be used for dewatering.

****

/

7.0 STACKING OF MINERAL REJECTS AND DISPOSAL OF WASTE:

a) Indicate briefly the nature and quantity of top soil, overburden/waste and mineral rejects likely to be generated during the next five years.

Top-Soil:-

Not Applicable

b) Land chosen for disposal of waste with proper justification:

From the development plan, it is clear that there will no generation of overburden and intercalated waste from total excavation. So, there is no proposal of dumping of waste.

Tailing Dump: Not applicable.

c) Build of dumps from year to year to be shown in yearly plans and sections with description of the method and manner of disposal of waste rock, designed capacity and height of individual dumps:

Not applicable due to the reason stated above.

****

8.0 USE OF STONE:

a) Describe briefly the end use of the mineral (sale to intermediary parties, captive consumption, export, industrial use).

Stone will be used for road making due to it hardness, resistance to weathering and high compressive strength.

b) Indicate physical and chemical specifications stipulated by buyers:

It is a raw material used for road, railway, building construction work. . Only physical specification such as different sizes 0 -5mm, 5-10mm, 10-20mm and 20-40mm is required for different purposes .There is no chemical specification stipulated by any buyers.

c) Give details in case blending of different grades of ores is being practiced or is to be practiced at the mine to meet specifications stipulated by buyers:

Not applicable. As stated above, stone is a raw material and lessee have install a crusher/screening unit outside the lease area towards south-west at a distance of 2km, where all the produced material will be taken for crushing for size reduction as per requirement.

****

/

9.0 OTHERS:

a) Site Services:

All the necessary facilities like drinking water, first-aid box etc. will be provided at the mine site.

b) Employment Potential:

Existing: At present there is no technical person in this project.

Proposed: The mine will be worked under the charge of a qualified executive supported by adequate number of other qualified persons to supervise operations and assume statutory responsibility for observing provision of Mines Act and the Rules & Regulations made there under including Mine safety aspects.

Mining operations will be done by open cast semi-mechanized method. However, some labours are also required for day to day maintenance work. No elaborate organizational structure is necessary, the executive will report directly to the management.

Management official staff

Sl. No.	Manpower	Numbers
1	Executives (Mining engineer)	01
2	Mining mate	03
3	Supervisors	05
Total	**-**	**09**

/

Skilled and non-skilled staff.

Sl. No.	Manpower	Numbers
1	Excavator	01
2	Dumper Driver (on hire)	2
3	Dumper Khalasi (on hire)	2
4	Labour	15
Total	**-**	**20**

****

10.0 MINERAL PROCESSING:

a) **If processing/beneficiation of the ore or minerals mined is planned to be conducted on site or adjacent to the extraction area, briefly describe the nature of processing/beneficiation. This should indicate site and grade of feed material and concentrate (finished marketable product), recovery rate.**

Stone is used in raw form in road, civil construction etc. As such, no beneficiation is required. Only different sizes are required by different consumers. As stated in earlier chapter that all the production of stone shall be utilized in applicant's own crusher for size reduction as per the requirement. For this, lessee has installed a crushing/screening unit outside the lease area.

b) Explain the disposal method for tailings or waste from the processing plant (Quantity and quality of tailings proposed to be discharged, size and capacity of tailing pond, toxic effect of such tailings, if any, with process adopted to neutralize any such effect before their disposal and dealing of excess water from tailing dam).

Not applicable.

c) A flow sheet of schematic diagram of the processing procedure should be attached.

Not applicable.

d) Specify quantity and type of chemicals to be used in the processing plant.

Not applicable.

/

e) Specify quantity and type of chemicals to be stored on site/plant.

Not applicable.

f) Indicate quantity (Cum per day) of water required for mining and processing and sources of supply of water. Disposal of waste water and extent of recycling.

Not applicable.

****

PART – B

11.0 ENVIRONMENT MANAGEMENT PLAN

a) Attach a note on the status of base line information with regard to the following:

i) BASE LINE INFORMATION:

A Key Plan as per Rule 28(5)(a) on a scale of 1:50000 has been prepared incorporating boundary of the mining lease and adjoining area lying within five (5) kilometres showing contours, natural drainage system, roadways, forests, village boundary, predominant wind direction has been shown in **(Plate -1).**

An Environment Plan of the area of mining lease inclusive of the adjoining area within five hundred meters of the boundary of the lease area on 1:5000 scale incorporating the boundary of the mining lease, contour lines, roadways, forests, predominant wind direction. No nalla, ponds & rivers etc. has been observed within the 60m boundary of the lease area.

Existing land use pattern indicating the area already degraded due to quarrying/pitting, dumping, roads, processing plant workshop, township etc. in a tabular form:

Existing Land Use Pattern:

At present about 0.0.022 ha area has been covered by roads. So, existing land use pattern is as follows.

/

EXISTING LAND USE PATTERN

Sl. No.	Pattern of land use	Area in Hectare
1	Quarry/pits	0.32
2.	Old Dumps	-
3.	Road	0.022
	Total	0.342

ii) Water Regime:

No river or nallah is passing through the lease area. The water table is available at a depth of 80 m from the surface level this is evident from a nearby tube-well and informed by village official.

iii) Flora & Fauna:

The lease area is free from vegetation and also within forest area. Only few trees and bushes scattering here and there and there is noticed. Because of lack of forest cover around and close to the area, there is no wild life of any significance has been reported except some domestic animals.

iv) Quality of Air, ambient noise level and water:

The prevailing environment scenario of this area is not polluted as very few mining or any other activities are being carried out in the area. Environment pollution due to generation of dust etc. is negligible. Water quality is not affected as there are no

/

sources of water within the target area. There is no impact on AAQ, water and noise level of the area because of lack of any activities in the area. However, the present environmental scenario of this area may be affected by the commencement of mining and transportation as the proposed method of mining will be by mechanized (OTFM) method**.**

v) Climatic Condition:

Koderma district experiences subtropical climate, which is characterized by hot summer from March to May and well distributed rain fall during southwest monsoon from June to October. Winter season in the area is marked by dry and cold weather during the month of November to February.

Rainfall:-

The normal annual rainfall data indicate that average rainfall is 1301mm. Maximum rainfall has been observed from June to October months. About 90% of the total annual rainfall is received to the monsoon period.

Temperature:-

January is the coldest month with the mean daily maximum temperature at 22°C and the mean daily minimum temperature at 3° C. From February both day and night temperatures increase rapidly till May which is the hottest month of the year with mean maximum temperature at 36°C.

/

vi) Human Settlement:

There is no human settlement within the mining lease area. There are few numbers of small villages within 5 km radius. All the villages are either connected by road or trekking paths. Most of them are engaged in cultivation.

vii) Public buildings, places of worship & monuments:

The area is devoid of any notable public buildings, National monuments, places of worship etc. There are no Natural Parks of tourist interest or wild life sanctuary near the area and in the core zone.

viii) Does the area (partly or fully) fall under notified area under water (prevention & control of pollution) Act 1974.

This area does not fall under notified area under water (prevention and control of pollution) Act 1974.

b) Attach an Environmental Impact Assessment Statement describing the impact of mining and beneficiation on environment on the following over the next five year.

i) Land degradation

At present about 0.022 Ha area has been covered by roads. From the development plan it has been calculated that during this plan period, about 0.66 Ha areas will be degraded due to mining and allied activities. Existing land use and area to be degraded during this plan period & Conceptual period is given in Table – 11.1.

Table – 11.1

/

PRESENT AND FUTURE LAND USE PATTERN

Pattern of Utilization	Existing Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry/pits	0.32	0.45	0.84
Road	0.022	nil	0.022
Infrastructure	--	0.01	0.01
Plantation in safety zone(Green Belt)	--	0.2	0.34
Total	**0.342**	**0.66**	**1.21**

ii) Impact on Air Quality:

The major cause of air pollution in the open cast mining is mainly due to generation of dust arising from mining activities. The sources of emission or generation of dust within the project area include:-

- **Dust from drilling, blasting & excavation of stones**:- During drilling , blasting & excavation of stones dust generation are for short duration and settle quickly within close ranges.

- **Emission during loading & unloading of materials**: - At the time of unloading of materials, large amount of fine dust is emitted, which appears like as dust cloud. These emissions are intermittent and last for about a couple of minutes during every unloading cycle.

/

- **Emission during transportation**: - Due to vehicular movement on non-metalled roads, fine dust settled on the ground gets airborne.

It is observed that dust generations are short term and settle quickly within close ranges. There is very less scope of spreading of dust particles to the nearby residential area. However, the dust fall rate will be reduced by adopting regular water spraying on roads and by plantation in the area.

Further, Ambient air quality will be monitoring at least once in a year to know the quality of AAQ.

iii) Impact on Water Quality:

Surface and ground water is not affected due to mining activity of this mine as there is no perennial source within the leasehold. There is no cause of contamination of water as no effluent is discharged from lease area and also stone is not a toxic material. Therefore the question will not arise in respect of pollution of water.

(iv) Noise level:

The source of noise in the area will be due to movement of dumpers/trucks and drilling & blasting. As such, there will be some noise pollution but it will be under permissible limit.

v) Vibration levels (due to blasting):

All the necessary precautions such as hoisting of red flag at a safe distance, alarming the people by whistling and shouting will be taken before blasting. A qualified blaster having blasters certificate will do blasting. Delay blasting will be done to control flying rock particles to avoid effect of blasting on nearby area.

/

However due to blasting ground vibration will generate which will be transient in nature as proposed mining is of small scale therefore this vibration will not have much impact. The protective measures will be taken by informing during blasting.

vi) Impact on Water regime:

The source of surface water is away from the area hence there will be no adverse impact on the surface water due to mining activities.

vii) Impact on Socio-economics:

It is a fact that Langrapras stone quarry of the koderma district is located in backward areas. There are few villages located within the 5 km radius of the lease boundary. The impact on socio economic will be positive one because of the generation of several skilled & unskilled jobs for which the local villagers are well suited. Due to mining, general living condition of the local people will be high and update.

As no agricultural land will be affected by mining & allied operations, there will be no adverse impact on agricultural activity.

viii) Historical Monuments etc.:

The area is devoid of any notable historical monuments.

c) Attach an Environment Management Plan (supported by appropriate plans and sections) defining the time-bound action proposed to be taken with sequence & timing in the following areas (or diagrams should be used):

Temporary storage and utilization of top soil:

There is no top soil in the lease area hence stacking of same is not required

/

Year wise proposal for reclamation of land affected by abandoned quarries and other mining activities during first five years:

Not applicable as there is no scope of reclamation of any pit by backfilling within five year of plan period, as the stone is not exhausted in any part of the existing stone body.

Programme of afforestation year wise for the initial five years indicating numbers of plants with name of species to be afforestated under different areas in hectares:

The year-wise plantation programme during this plan period is given in **Table – 11.2**.

Table – 11.2

TABLE SHOWING PROPOSED PLANTATION PROGRAMME DURING THE PLAN PERIOD.

Year	Location	No. of Plants	Area to be Covered (Sq. m)	Expected Survival Rate (%)
1st	Within the Safety zone	100	400	60 to 75%
2nd	-do-	100	400	
3rd	-do-	100	400	
4th	-do-	100	400	
5th	-do-	100	400	
Total	-	**500**	**2000**	

Measures to control erosion/sedimentation of water courses:

There is no perennial water course near the work zone. Hence, water course will not be affected due to this mine.

Treatment and disposal of water from mine:

Not applicable.

Measures for minimizing adverse effects on water regime:

As stated earlier, surface water and ground water sources are not affected due to this project. There will be no quarry discharge water from the mine. However mine will be temporary discontinued during rainy season so there is no measures required for minimizing the adverse effects on water regime.

Protective measures for ground vibrations/air blast caused by blasting:

All the necessary precautions such as hoisting of red flag at a safe distance, alarming the people by whistling and shouting will be taken before blasting. A qualified blaster having blasters certificate will do blasting. Delay blasting will be done to control flying rock particles to avoid effect of blasting on nearby area. However due to blasting ground vibration will generate which will be transient in nature as proposed mining is of small scale therefore this vibration will not have much impact. The protective measures will be taken by informing during blasting.

Measures for protecting historical monuments and for rehabilitation of human settlements likely to be disturbed due to mining activity:

The area is devoid of any notable historical monuments and rehabilitation of human settlements will not be effected due to mining activity.

/

Socio economic benefits arising out of mining:

Considering the proposed scale of operation and assessing the base line data on physical environment, the possible environmental impact due to proposed mining activities, will not be adverse rather mining activity in the area will brought some positive effect like better employment potentiality, Communication, high standard of living, etc.

****

CHAPTER-XII

PROGRESSIVE MINE CLOSURE PLAN

12.1 INTRODUCTION

Langrapras Stone Quarry over an area of 1.21 hectares/3.0 acres in village Langrapras, Plot no. 22/Part, P.S. – Domchanch, Dist. – Koderma, Jharkhand and village Domchanch, Plot no. 6/Part, P.S. – Domchanch, Dist. – Koderma, Jharkhand is granted in favour of M/s Mahavir Stone chips, Prop – Sri Harsha Vardhan Pandey, for a period of ten(10) year from 01.04.2000 to 31.03.2010.

Langrapras Stone Quarry of Sri Harsha Vardhan Pandey is located in survey of India Topo Sheet No. 72 H/11and bounded by Latitude: 24°29’15.09”N to 24° 29' 20.33" N & Longitude: 85° 39' 49.60" E to 85° 39' 54.87" E. The lease area is located at a distance of 8 kms on the north-east side of district head quarter Koderma. The National Highway (NH-33) is at a distance of 8 KM from the Lease area and State Highway is at a distance of 3 KM from lease area. The lease area is approachable from Ranchi through NH-33. The nearest Railway Station is Domchanch which is about a distance of 5 km from the lease area. The area around the project is of forest area.

The production target of the lessee is about 9500 Cum. per annum (Approx); the method of mining adopted is by opencast semi-mechanized method (OTFM).

The progressive mine closure plan for the above mine is prepared under rule 23B of MCDR 1988.

/

a) Name of the applicant	Sri Harsha Vardhan Pandey
Address	Village - Domchanch, P.O.- & P.S.- Domchanch
District	Koderma
State	Jharkhand
Pin Code	825418
Phone	08294959264
e-mail	
b) Details of area (with location map)	Langrapras Stone Quarry of Sri Harsha Vardhan Pandey is located in survey of India Topo Sheet No. 72 H/11and bounded by Latitude: 24°29'15.09"N to 24° 29' 20.33" N & Longitude: 85° 39' 49.60" E to 85° 39' 54.87" E. It is located in survey of India Toposheet No. 72H/11. (**Ref: Key Plan - Plate No. 1**).
District and State	Dist.- Koderma and State- Jharkhand
Taluka	Domchanch
Village	Domchanch & LangraprasUlidih
Khasra No./ Plot No./ Block Range / Felling Series etc.	Plot no. 22(Part) & 6 (Part)
Lease Area (hectares)	3.00 acre or 1.21 ha
Whether the area is recorded to be in forest (please specify whether protected, reserved etc.)	Entire area is Forest land and category of forest is village forest.
Land Use Pattern (Forest, Agricultural, Grazing, Barren etc.)	Total 3.00 acres/1.21 Ha is in forest land

/

Method of Mining & Mineral Processing	Mining will be done by open cast semi-mechanized method. No processing of stone is required as the rom will sell directly

12.1.1 Reason of Mine Closure:

There is no reason for closure of mine in near future as in the view of reserve position and rate of production the life of the mine is estimated about 40.52 years. Hence, except for some unforeseen circumstances, no other reason stands valid for closure of mine during the ensuring period of 5 years.

12.1.2 Statutory Obligation:

The Central Government vide notification No GSR 329 (E) dated 10.4.2003 & No. GSR 330 (E) dated 10.4.2003 amended the Mineral Concession Rules, 1960 and Mineral Conservation & Development Rules, 1988 respectively. In the notification it has been enumerated that the "Progressive Closure Plan" &"Final Closure Plan" should be in the format & as per the guidelines issued by the Indian Bureau of Mines.

Mine closure operation is a continuous series activities starting from day one of the initiation of mining project, mine closure is a continuous series of activities, it is obvious that the proposals of scientific mining have had included most of the activities to be included in the progressive mine closure.

I also give an undertaking to the effect that all measures proposed in this closure plan will be implemented in a time bound manner. In this connection a certificate is enclosed**.**

/

12.1.3 Closure Plan Preparation:

a) Name of the applicant	Sri Harsha Vardhan Pandey
Address	Village - Domchanch, P.O.- & P.S.- Domchanch
District	Koderma
State	Jharkhand
Pin Code	825418
Phone	08294959264
e-mail	
b) Name of the RQP preparing the mining plan	Bipin Bihari Lall
Address	1236/2, Lajpat Nagar, Near Lala Lajpat Rai School, Pundag, Argora, Ranchi, Jharkhand - 834004
Phone	0651- 2902588/2246412
Fax	0651- 2242513
e-mail	gems.projects@yahoo.in
Telex	-
Registration No.	RQP/RNC/140/2009/A
Date of grant / renewal	05th March 2009
Valid up to	04th March 2019

/

12.2 Mine Description:

12.2.1 Geology:

The above have been described in detail in chapter 3.0 of this mining plan.

12.2.2 Reserves:

The above have been described in detail in chapter 3.0 of this mining plan.

12.2.3 Mining Method:

The above have been described in detail in chapter 4.0 of this mining plan.

12.2.4 Mineral Beneficiation:

The above have been described in detail in chapter 10.0 of this mining plan.

12.3 Review of Implementation of Scheme of mining plan/ Scheme of Mining including five years Progressive Closure Plan up to final closure of mine:

The details of various proposals and other special emphasis on the proposals for protection of environment etc. are newly implemented in the minor mineral therefore it is not applicable.

12.4 Closure Plan:

12.4.1 Mined- out Land:-

Presently there is no proposals/implementation for reclamation and rehabilitation of mine out land during the plan period as the deposit of the stone is still continued in depth.

12.4.2 Water Quality Management:

No river or nallah is passing through the lease area. The water table is available at a depth of 80 m from the surface level this is evident from a nearby tube-well and informed by village official. Therefore the question will not arise in respect of pollution of water.

12.4.3 Air Quality Management:

The stone mining activity involves various processes such as drilling, blasting, crushing, loading & unloading, transportation, etc. which are likely to contribute towards air pollution in the area. The effect is localized and this effect mostly due to fugitive in emission of dust particles. There is no other source for SO2, NOx and CO except a little contributed by the vehicular traffic, which is well below the prescribed limits. The following air pollution control measures are proposed;

- The unmetalled haul roads shall be adequately compacted before being put into use
- Regular water spraying on roads.
- Overloading of the transport equipment shall prevent in order to stop spillage.
- By plantation in the area.

Further, Ambient air quality will be monitoring at least once in a year to know the quality of AAQ.

12.4.4 Waste Management:

Based on the geological study of the area, about 100% recovery of stone is considered without any mining. From the development plan, it is clear that there will be no generation of overburden and intercalated waste from total excavation. So, there is no proposal of dumping of waste.

12.4.5 Top-Soil Management:

Not applicable.

/

12.4.6 Tailing Dam Management:

There is no wet mineral processing and beneficiation activities taken place in the lease area, hence it is not applicable.

12.4.7 Infrastructure:

Statutory and essential infrastructures likes shed, first aid centre, latrine / urinal and drinking water facilities etc. for workers, will be provided in the work site and site office.

12.4.8 Disposal of Mining Machinery:

There is no scope of closure of mines during this plan period. So, there will be no decommissioning of mining machinery during the planned period. Life of the mines at the present rate of working has been calculated to be around 40.52 years. At the end of work the machines will be shifted to other locations or it will be disposed of by open auction of the lessee.

12.4.9 Safety and Security:

The mine is not going to be exhausted during this plan period. As calculated, with the available recoverable reserve, the anticipated life of the mine is 40.52years.

However, in case of temporary discontinuing of mine, a caretaker, mostly a guard will be kept the mine site with a sign board mentioning the depth of the water and the quarry. To restrict the entry of the mine, fencing shall be done and the approach road will be locked.

12.4.10 Disaster Management and Risk Assessment:

High risk factors such as landslide, subsidence flood, fire, tailing dam failure etc. are neither encountered nor anticipated. As such, emergency plan for quick evacuation, ameliorative measures are not proposed.

12.4.11 Care & Maintenance during Temporary Discontinuance:

When the mine is temporarily discontinued due to any unforeseen circumstances the following care and maintenance shall be carried out:

• Notice to be served to all the concerned authority.

• Temporary fencing shall cover the mining pit area.

• All access roads/openings to the pit / face shall be closed by barbet wire as per rule.

• Warning shall be displayed on the 'Notice Board' at appropriate places.

• No unauthorized person shall be allowed to enter into the mine without prior permission of the management.

• Mine benches shall be dressed and properly sloped for its stability.

• All safety precautions shall be taken care of as per rule.

12.5 Economic Repercussion of Closure of Mine and Manpower Retrenchments:

12.5.1 Number of local Residents Employed in the Mine, Status of Continuation of Family Member:

20 local people will be directly employed in the mine & same no. will be indirectly benefited.

12.5.2 Compensation Given or to be Given to The Employees in Connection with Sustenance of Himself and Their Family Member:

Not applicable.

12.5.3 Satellite Occupations Connected to the Mining Industry, Number of Persons Engaged There in Continuance of Such Business After Mine Closure:

Not applicable.

/

12.5.4 Continued Engagement of Employees in the Rehabilitated Status of Mining lease Area And Any Other Remnant Activities:

Not applicable.

12.5.5 Envisaged Repercussions on The Expectation of The Society Around Due to Closure of Mine:

Not applicable.

12.6 Time Scheduling For Abandonment :

Activities	**Tentative time frame for completion of jobs for mine closure operation (in months) from date of cessation.**											
	1	2	3	4	5	6	7	8	9	10	11	12
Reclamation & Rehabilitation of mined out land	Persistence of stone will be continued after lease period i.e. 40.52 years therefore reclamation and rehabilitation should not be possible in view of stone conservation. However, at the conceptual stage backfilling in the mined out area has not been planned.											
Waste Management	No waste will be generated during this plan period so there is no proposal of dumping of waste.											
Decommission of infrastructure	Not applicable											
Safety & Security	All the safety and security will be provided as per DGMS statutory provision.											
Plantation	Plantation has been proposed along the safety zone which is demarcated in related plan.											
Monitoring of air & water	→											
Disposal of mining machineries.	→											

12.7 Abandonment Cost:-

There is no possibility of closure of mine during the lease period. However, tentative cost of each of important activity of abandonment e.g. decommissioning, reclamation & rehabilitation, plantation etc. have been indicated to have the idea about the funds that may be required for the final closure.

(1) Decommissioning/ Demolition:

Not applicable

(2) Removal of infrastructure:

Not applicable

(3) Removal of equipment's and heavy machineries:

Not applicable

(4) Site safety:

Fencing will be done around the high wall side of all discontinued quarries. Therefore, an amount of Rs. 10000.00/- will be required for this purpose.

(5) Remediation/ Mitigation measures:

(a) Construction of Parapet wall: Not applicable

(b) Construction of check dam: Not applicable

(c) Providing garland drain: Not applicable

(6) Reclamation and rehabilitation of workings:

No reclamation by backfilling is proposed during this lease period.

(7) Plantation:

Planation will be done along the safety zone towards south portion of the lease area therefore an amount of Rs. 10000.00/- will be required for this purpose.

12.8 Financial Assurance:

The financial assurance is given in the table below

Sl. No.	Head	Area put to use at the start of plan(Ha)	Additional Area required during the 5yrs period(Ha)	Area considered as fully reclaimed & rehabilitated(Ha)	Net area considered for calculation of financial assurance(Ha)
1	Excavated area	Nil	0.77	Nil	0.77
2	Top soil storage	Nil	Nil	Nil	Nil
3	Dump area used under five year development programme	Nil	nil	Nil	nil
4	Mineral storage	Nil	Nil	Nil	Nil
5	Infrastructure (workshop, amenity & utility buildings, crushing plant)	Nil	0.01	Nil	0.01
6	Railways	Nil	Nil	Nil	Nil
7	Tailing Pond	Nil	Nil	Nil	Nil
8	Effluent treatment plant	Nil	Nil	Nil	Nil
9	Township area	Nil	Nil	Nil	Nil
10	Sub grade stock	Nil	Nil	Nil	Nil
11	Plantation	Nil	0.2	Nil	0.2
12	Road	0.022	nil	-	0.022
	Total area				1.002

/

The total degraded area within the lease hold is 1.002 ha. Therefore financial assurance up to the end of 5 year period 1.002ha. x 25000 = Rs.25050/-. As per rule 23F of MCDR 1988 the amount of financial assurance will be 2lakh (minimum).

12.9 Certificate:

A certificate in this effect is enclosed along with this report.

12.10 Plans/ Sections etc.

The required plans and sections are enclosed.

BIPIN BIHARI LALL

(RQP/RNC/140/2009/A)

****