

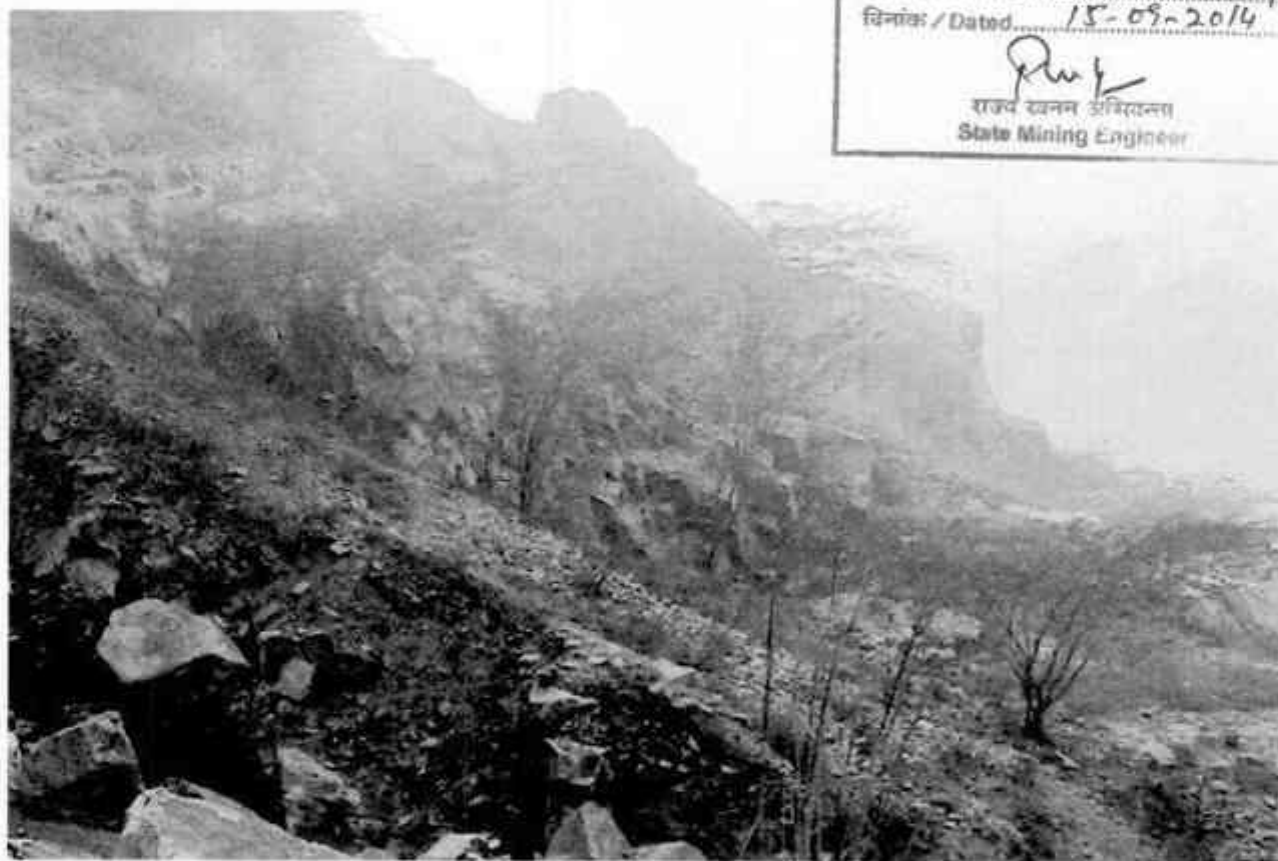
FINAL MINING PLAN AND PROGRESSIVE MINE CLOSURE PLAN OF STONE ALONG WITH ASSOCIATED MINOR MINERALS

VILLAGE: ATELA KALAN
DISTRICT: BHIWANI
STATE: HARYANA
(Area-54Hectares)

खान एवं भूविज्ञान विभाग, हरियाणा, चण्डीगढ़
Department of Mines and Geology,
Haryana, Chandigarh
APPROVED

With Conditions
अनुषंगी शर्तों के साथ अनुमोदित
Vide letter No. DMG/HY/Atela Kalan/MP/4154
दिनांक / Dated: 15-09-2014


राज्य खनन अभियन्ता
State Mining Engineer



TO: DMG, HARYANA

APPLICANT

M/s. MSK (JV),
S-571, Greater Kailash Part-II,
New Delhi -110048

PREPARED BY

S.N. SHARMA
RQP/DDN/0135/2001-A
House No. 282, sector 11-D,
Faridabad (Haryana)

MINING PLAN AND PROGRESSIVE MINE CLOSURE PLAN

OF

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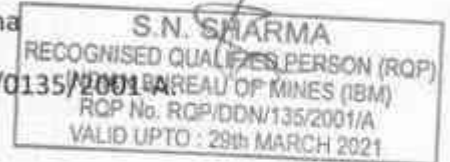


Certificate

The Mining plan and Progressive Mine Closure Plan complies all statutory rules, regulations, orders made by the Central or State Government, statutory organizations, court etc. have been taken into consideration and wherever any specific permission is required the lessee will approach the concerned authorities. It is also undertaken that all the measures proposed in the Progressive Mine Closure Plan will be implemented in a time bound manner as proposed.

S.N. Sharma

RQP/DDN/0135/2001/A



Certificate

- i) Certified that the provisions of Mines Act, Rules & Regulations made there under have been observed in this Mining Plan and whenever specific permission is required the applicant will approach the Director General of Mines Safety.
- ii) It is also certified that the information furnished in the above Mining Plan are true and correct to the best of my knowledge. In case of default, the approval would be withdrawn.

S.N.SHARMA

RQP/DDN/0135/2001/A

S.N. SHARMA
RECOGNISED QUALIFIED PERSON (RQP)
INDIAN BUREAU OF MINES (IBM)
RQP No. RQP/DDN/135/2001/A
VALID UPTO : 29th MARCH 2021



MSK (JV)

S-571 GREATER KAILASH II, NEW DELHI 110048

TEL: 011-29220374/75 FAX: 011-29220377

Declaration

The Mining Plan and Progressive Mine Closure Plan complies all statutory Rules, Regulations, orders made by the Central or State Government, statutory organizations, court etc. have been taken into consideration and wherever any specific permission is required the lessee will approach the concerned authorities. It is also undertook that all the measures proposed in the Progressive Mine Closure Plan will be implemented in a time bound manner as proposed in the Mining Plan.


Applicant



CHAPTER -1

1.0 Introduction

M/s MSK (JV),S-571,Greater Kailash Part-II,New Delhi was the highest bidder (Rs. 16,07,00,000) for the auction of the AtelaKalan for Road Metal and Masonry stone (Minor Minerals) of Dadri Tehsil .

Letter of Intent has been issued by the Director Mines & Geology Haryana vide letter no DMG/Hy/ML/AtelaKalan/2013/155 dated 03-1-2014 for Mining of " Stone along with Associated minor minerals in AtelaKalan over an area of 54.00 hectares in Tehsil Dadri district Bhiwani,Haryana for a period of 12 years (Annexure - I).

The applicant is involved in the mining business for last many years. The applicant can invest necessary funds for the scientific and systematic development of mines including land rejuvenation and progressive reclamation programme and other measures necessary to protect the quality of the environment and human health etc.

The objective of preparation of this Mining Plan and Progressive Mine Closure Plan is to fulfill the conditions stipulated by the Department of Mines & Geology, Haryana required under Haryana Minor Mineral Concession Rules, 2012. The conditions which are related to the mining plan are reproduced here below.

- The period of lease shall commence w.e.f the date of grant of environmental clearance by competent authority as required under EIA notification dated 14.09.2006 issued by the MoEF, Gol or on expiry of a period of 12 months from the date of acceptance of highest
- The lessee shall also deposit/pay an additional amount equal to 10% of the due dead rent or royalty whichever is more along with installments towards the 'Mines and Minerals Development, Restoration and Rehabilitation Fund';
- The mining lessee shall got prepare a Mining Plan along with the Mine Closure Plan (Progressive & Final) from the Recognized Qualified Person as per chapter 10 of



the "Haryana Minor Mineral Concession, Stocking, Transportation of Minerals and Prevention of Illegal Mining Rules, 2012" for Mining Area granted on lease. The Mine Lessee shall not commence mining operations in any area except in accordance with such Mining Plan duly approved by an officer authorized by the Director, Mines & Geology, in this behalf. Further, the actual mining will be allowed to be commenced only after getting Environmental Clearance by the Lol holder/mining lessee for the Mining Lease Area from Competent Authority as required under notification dated 14/9/2006 and 04.04.2011 issued by the MoE&F, Gol.

- The Mining Lessee would also be liable to pay following to the land owners;
 - (a) The annual rent in respect of the land area blocked under the concession but not being operated, and
 - (b) The rent plus compensation in respect of the area used for actual mining operations.

The amount of annual rent and the compensation shall be settled mutually between the landowner and the mining lessee. In case of non-settlement of the rent and compensation the same shall be decided by the District Collector concerned in accordance with the provisions of Chapter 9 of the "Haryana Minor Mineral Concession, Stocking, and Transportation of Minerals and Prevention of Illegal Mining Rules, 2012".

- The total mineral excavated and stacked by the concession holder within the area granted on mining lease shall not exceed two times of the average monthly production as per approved Mining Plan at any point of time.
- The Mining Lessee shall not stock any mineral outside the concession area granted on mining lease, without obtaining a valid mineral dealer license as per provisions contained in Chapter 14 of the "Haryana Minor Mineral Concession, Stocking, Transportation of Minerals and Prevention of Illegal Mining Rules, 2012".



- In the interest of associated downstream mineral-based processing industries, the lessee shall be under obligation to make available up to 75% of the produced raw material/stone to the downstream industries i.e stone crushers operating in the area. However, in case lessee is unable to find market for his raw mineral to the extent of 75% of production, he would be required to obtain prior permission of the department to consume raw mineral in excess of 25% of his production but not exceeding 50% of his production for grounds to be recorded in writing;
- The lessee shall not carry out any mining operations in any reserved/protected forest or any area prohibited by any law in force in India, or prohibited by any authority without obtaining prior permission in writing from such authority or officer authorized in this behalf. In case of refusal of permission by such authority or officer authorized in this behalf, lessee (s) shall not be entitled to claim any relief in payment of dead rent/royalty on this account.
- That no mining operation shall be allowed in the urbanizable zone of area notified by Town and Country Planning Department. Further, in case of the agriculture zone of area notified by Town and Country Planning Department, mining shall be permissible only after obtaining prior permission from the competent authority.
- A safety margin of two meters (2m) shall be maintained above the ground water table while undertaking mining and no mining operations shall be permissible below this level unless a specific permission is obtained from the competent authority in this behalf.
- The lessee shall not undertake any mining operations in the area granted on mining lease without obtaining requisite permission from the competent authority as required for undertaking mining operations under relevant laws.
- No transfer of lease shall be permissible for a period of first five years of grant of lease. However, on submission of an application, in accordance with the provisions of the Haryana Minor Mineral Concession, Stocking, Transportation of Mineral & Prevention of Illegal Mining Rules, 2012, and after satisfying itself the state



government may allow inducting of other partners/shareholders to the extent of forty nine percent of the total shareholding of the original leaseholder;

The lessee shall be under obligation to carryout mining in accordance with all other provisions applicable as per Mines Act, 1952, Mines and Minerals (Development and Regulation) Act, 1957, Indian Explosive Act, 1884, Forest (Conservation) Act, 1980 and Environment (Protection) Act.1986 and the rules made there under. Further, the provisions of Water (Prevention and Control of Pollution) Act.1974, Air (Prevention and Control of Pollution) Act.1981 and Wild Life (Protection) Act, 1972 shall also be enforced.

Mining of mineral is no doubt essential for industrial growth and for providing better standard of living. But, there are environmental concerns related to mining activities i.e. land degradation, pollution of air, water, soil & noise affecting biological environment and socio-economic environment. It has been experienced that in the past, due to unplanned exploitation and inadequate regard to the environment, mining operations have caused lot of damage to the mother earth.

In order to maintain the balance in the eco-system and sustainability of the mining area and the nearby areas a scientific mining scheme and progressive mine closure plan is required. Therefore, the same is prepared as per the guidelines for the mining plan/mining scheme covering all-important aspects required in respect of minor minerals.



1.0. General:

1.1. Name of the Applicant: M/s MSK (JV),S-571,Greater Kailash Part-II, New Delhi
110048

1.2 Status of the Applicant:-The applicant is a joint venture of the following companies (Partnership Deed is attached as Aneexure-2)

1. MKE is a mining contracting company having 25 yrs of experience in operating mines
2. Shivalya construction is a construction company having expertise in road and building construction .
3. Khatusham is a crushing company having expertise in producing and marketing building material products.

1.3. Mineral or Minerals, for which the Applicant has a mining lease:

Stone along with associated minor minerals

1.4 Details of the land covered under Mineral Concession Area along with Boundary Pillar Co-ordinates:

Details of the land covered in the 'M.L. Area' are as under:-

District Bhiwani
State Haryana
Taluka Dadri



Village	Khasra no.	Area in Hect.	Ownership
AtelaKalan	103,104 min,105,106,107 min	54hectares	GramPanchayat

Boundary Pillar Coordinates

Boundary pillar	Co-ordinates	
	Latitude	Longitude
BP-1	N28° 34' 39.02 "	E 76° 05' 38.24"
BP2	N28° 34' 41"	E 76° 05' 52.2"
BP3	N28° 34' 41.2"	E 76° 06' 5.3"
BP-4	N28° 34' 41.9"	E 76° 06' 5.9"
BP-5	N28° 34' 42.11"	E 76° 06' 8.13"
BP-6	N28° 34' 40.19"	E 76° 06' 7.1"
BP-7	N28° 34' 37.08"	E 76° 06' 4.28"
BP-8	N28° 34' 36.81"	E 76° 06' 4.48"
BP-9	N28° 34' 40.19"	E 76° 06' 8.13"
BP-10	N28° 34' 24.53"	E 76° 06' 13.9"
BP-11	N28° 34' 10.94"	E 76° 05' 59.22"
BP-12	N28° 34' 23.37"	E 76° 05' 45.6"

Plan of the area under mineral concession delineated with boundary pillars shown in Plate No. 3 (As Surface Geological Plan) along with its Latitude & Longitudes.

Plate No. 2 indicates Key Plan of the area covering a radius of 5 Kms from Mine lease hold area.

- 1.5 Period for which mining lease is granted: 12 years w.e.f the date of grant of environmental clearance by competent authority or on expiry of a period of 12 months from date of issuance of LOI (Annexure-1)
- 1.6. Name, Address and registration number of the person who Prepared this plan.-

The applicant assigned the work of preparation of mining scheme to Sh. S. N. Sharma (Consent letter enclosed as Annexure -3)

Sh. S.N.Sharma

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Email– sn_sharma1959@rediffmail.com



CHAPTER – 2

2.0 Location and accessibility

The mines are located in the revenue estates of Villages AtelaKalaninDistt. Bhiwani, Haryana and are about 15 Kms from CharkhiDadri ,District Bhiwani, The leased area lies between the latitudinal paralle falling in the survey of India Topo Sheet No. 53-D/2. The lease area is located on the katcha road and then a metalled road upto village AtelaKalan and is easily approachable from CharkhiDadri, Bhiwani and other important towns.

A General Location and vicinity map are attached as plate no.1

Key plan: key plan on 1: 50,000 scale covering an area in a radius of 5 km showing salient features as per Rule 28(5) (a) of MCDR, 1988 has been prepared on Topo Sheet no.53 D/2 (plate no. 2)The area is marked on the enclosed key map. The deposit lies between latitude $28^{\circ}34'14''$ to $28^{\circ}34'50''$ and Longitude $76^{\circ}5'35''$ to $76^{\circ}6'17''$ (Plate no. 2)

Infrastructure facilities are as detailed below

Nearest railway station	CharkhiDadri(15 km)
Police station	CharkhiDadri
Post office	All the nearby villages
Medical facilities	CharkhiDadri and Bhiwani
Electricity	Electrical supply is available in all nearby villages.
Education facilities	Most of the nearby villages have secondary schools and for higher education institutes are available at CharkhiDadri, Bhiwani, Rohtak& other nearby towns
Mode of transportation of mineral	Mineral stone will be transported by tippers/ trucks. Loaded trucks will travel on Kuccha road made for plying of trucks up to the crushers in the nearby area. Village Atela is connected with metaledroad is which further joins the Dadri and nearby cities.



CHAPTER – 3

PART-A

3.0 GEOLOGY, LITHOLOGY AND MINERAL RESERVES

3.1.1 Physiography, Drainage and Climate

There is no perennial river passing through the district. Physiographical the district consists of flat and level plain interrupted from place to place by clusters of sand dunes, isolated hillocks and rocky ridges. A few isolated rocky ridges elevated sharply from the plain occur in the south central portion of the district.

The lease area is consists of Hilly terrain.

The lease area does not have any water body. There are dry nalas in which water flows during rains for a short duration, otherwise they remain dry for the rest of the months. The rain water from these nalas drains either into local Johars or in agriculture fields.

3.1.2 Hydrogeology

The geological formation met within the district are ferruginous schist associated argillaceous rocks of Aravalli group, Alwar quartzite of Delhi system, Malani suite of volcanic of lower Vindhyanage, Older alluvial deposits of Quarternary age and aeolon sands of recent age the out crops are, however, limited to small parts of the

district, Older alluvium occurs extensively in the area consisting of interbedded, lenticular, interfingering deposits of gravel sand, soil, clay and Kanker mixed in various proportions. The youngest formations are Aeolian deposits, which are unconsolidated surface sands covering large area in the western part of the district, these deposits occur as sand dunes at the surface and consist of sands. Ground water occurs in alluvium and Aeolian sands and under lying jointed and fractured hard rock formations also form the aquifers, in alluvium, sands, silt, kankar and gravel form the water



bearing zones. In-shallow aquifers zones, ground water occurs under water table conditions whereas in the deeper zones, confined/semi-confined conditions exist, hard rocks comprising of Aravalli group of rocks, Malani suite of volcanics and Alwar Quartzites of Delhi system are water bearing but have yet not been explored thoroughly. It is shallow and between 3m to 10 m in the Northern, Northeastern and Eastern (Tosham Bhiwanikhera Dadri -I and Bhiwani blocks) and 10 to 20 m bgl in the Southern and Northwestern parts of the district (Badra, Dadri -II and Siwani). Ground water levels are deeper in the Western and some patches in the Central part ranging from 20 to 50 m (Loharu and Siwani blocks). During the pre-monsoon period depth to water in the district varies from 2.24 m bgl (Northern, Northeastern and Eastern part) to 53.50 m bgl (Western). In the post-monsoon period depth to water table ranged between less than 2.63 m bgl to 47.93 m bgl. Seasonal fluctuation shows an overall rise in water level due to the monsoon rains. But for this project area (Atela kalan Mine), our experts surveyed adjoining dug wells, hand pumps and found and measured that water table is 45 meters below the ground level and therefore the mining operations are proposed up to 40 mts below the ground level.

3.1.3 Climate & Rainfall:

The climate of Bhiwani district can be classified as tropical steppe, semi-arid and hot which is mainly dry with very hot summer and cold winter except during monsoon season when moist air of oceanic origin penetrates into the district. There are four seasons in a year. The hot weather season starts from mid-March to last week of the June followed by the south-west monsoon which lasts up to September. The transition period from September to October forms the post-monsoon season. The winter season starts late in November and remains up to first week of March. The normal annual rainfall of the district is 420 mm which is unevenly distributed over the area 22 days. The south west monsoon sets in from last week of June and withdraws in end of September, contributed about 85% of annual rainfall. July and August are the wettest months. Rest 15% rainfall



is received during non-monsoon period in the wake of western disturbances and thunder storms.

Rainfall in the district increases from southwest to northeast.

Normal Annual Rainfall	420 mm
Normal monsoon Rainfall	355 mm
Temperature –	
Mean Maximum	41°C (May & June)
Normal Rain days	22°C

3.2 REGIONAL GEOLOGY OF THE AREA

Regionally the area belongs to the Alwar Series of Delhi Super Group. The regional stratigraphic sequence in Mohindergarh and Bhiwani districts is as follows:

	<i>Ajabgarh series</i>	Biotite-schist, phyllites, quartzites and impure biotitic limestones and calciphyres.
Delhi System	<i>Alwar series</i>	Quartzites, arkose, conglomerates and mica-schists with bedded lavas.
	<i>Rialo series</i>	Rialo limestone and Rialo marble, quartzite

The different formations of the area belong to Alwar Series of Delhi Super Group. The following sequences have been observed in the area.

- Alluvium
- Quartzite (Road metal and masonry stone)

3.3 **LOCAL GEOLOGY:** The areas were surveyed geologically. A Geological Plan (Plate no.3) and Sections (Plate no.4) are prepared on 1:1000 scales.

DESCRIPTION OF FORMATION

The different formations of the area belong to Alwar Series of Delhi Super Group. The following sequences have been observed in the area.

- Alluvium



- Quartzite (Road Metal and Masonry Stone)

The description of different formation found in the area have been as under

QUARTZITE (BUILDING STONE)

This type of formation covers the major part of the hills in the area.

It is reddish, bluish and gray in color, semi friable to hard and fine grained in nature. Quartzite occurs mostly as building stone extending over the entire length and width of the lease area. The strike of the quartzite formation varies from N 20- 25^o E to S 20^o - 25^o W with dip of 45 to 60^o due east.

STRUCTURE

The general strike of quartzite is N 20^o-25^o E to S 20^o-25^o W with dips of 45^o to 60^o due East.

The strike and dip of the quartzite bands is not uniform since there are structural disturbances.

ORIGIN AND CONTROL OF MINERALISATION

Quartzite is a metamorphosed product of sand stone, which have undergone low degree metamorphism.

EXPLORATION & METHOD OF RESERVE ESTIMATION

The entire lease area is prominently marked by outcrops of building stone. Moreover, the area has undergone quartzite (building stone) mining in the past; therefore, no fresh exploration to prove the geological reserves was required as abundant pits of quartzite have prominently exposed the formation.

3.4 RESERVES

Methods of estimation of reserves of quartzite:-

For estimating the reserve of Quartzite (Building stone) the following Parameters are considered are as follows:

1. The reserves are calculated on the basis of established width, thickness and strike length/influence of the mineralized formation in the area where good pits are available such area is put under proved category.



2. The entire reserves of quartzite are put under proved category above valley level i.e. up to 255 MRL. Next 30 meters are considered as probable and further 10 meters as possible.
3. The bulk density of road metal and masonry stone (quartzite) is considered 2.5 which is further multiplied by bulk density to arrive at the tonnage.
4. The Section wise reserves for road metal and masonry stone(quartzite) are summarized here below: -

Cross section line	Cross sectional area	Influence length(m)	Bulk Density	Proved Reserves MT	Probable Reserves MT	Possible Reserves MT
A-A'	200 18420 6140	104	2.50	52000	47,89,200	15,96,400
B-B'	1200 26520 8840	100	2.50	3,00,000	66,30,000	22,10,000
C-C'	1600 25650 8550	100	2.50	4,00,000	64,12,500	21,37,500
D-D'	3500 24960 8320	100	2.50	8,75,000	62,40,000	20,80,000
E-E'	34920 24420 8140	100	2.50	87,30,000	61,05,000	20,35,000
F-F'	39820 19470 6490	100	2.50	99,55,000	48,67,500	16,22,500
G-G'	29986 13530 4510	100	2.50	74,96,500	33,82,500	11,27,500
H-H'	22448 7620 2540	90	2.50	50,50,800	17,14,500	5,71,500
Category-wise reserves				3,28,59,300	4,01,41,200	1,33,80,400
Total Reserves				8,63,80,900		
Mineable reserves @80%				6,91,04,720		
				Or say 69.105 Million tons		



CHAPTER 4

MINING

4.1 Site Appreciation:

Our experts (Geologist, Mining Engineer) visited the mine site and found that the existence of old working in the area reveals that the area was worked for building stone in the past. One old pit namely P-1 with dimensions of 426mx50 m covering an area of about 2.13 ha was worked in the past by earlier contractors. Existing road length is about 640 m. The shape of the pit shows that no systematic mining was done. Now it is proposed to do systematic and scientific mining of road metal and masonry stone/building stone during the lease period.

4.2 Pre-production Activities (Development during the First five years)

As the area has been worked in the past unsystematically. Pre production development work is required to align the mine road and to reach the top of the mine for mining. The construction of garland parapet, wire fencing etc, shall be provided year wise and will be shifted along with the development of pit. A stack yard (50mx50m) is proposed for mineral. Soil stack yard (30mx30m) is proposed to stack the soil generated during the mining.

For making stacking yard, ground is almost level. A boundary wall around soil stack yard shall be made. The position of fencing, drain, toe wall, dump yard size and soil stack yard size, plantation etc at the end of 5th year is shown as detailed below and shown in the year wise plans plate no.5-9 and sections plate no.10.



Year	Toe wall around dumps	Drain around dumps	Drain at the end of 5 th year	Fencing at the end of 5 th year
At the end of 5th year	240m	240 m	660m	1220 m

Soil stack yard =30x30m.

Dump yard size =50mx50 m

Working area occupied at the end of 5th year will be= 6.50 Hectares

A part from the above site service shall be developed which include construction of manager's office, Crèche, Canteen etc.

Approach road from mine to mineral stack yard, soil stack yard and dump yard and site services shall also be made.

The existence of old working in the area reveals that the area was worked for building stone in the past. Two pit namely P-1 with dimensions of 360mx125m covering an area of about 4.50 ha and P-1 with dimensions 680mx47m covering 3.20 ha area are there. Existing road length is about 2800m. The shape of the pit shows that no systematic mining was done. Now it is proposed to do systematic and scientific mining of road metal and masonry stone/building stone during the lease period.

As a pre-production activity, roads from crusher to top most entry to the initial mining area, from mining faces to the proposed dump area, from ground level to the mining area, to the mines office complex, and to the garage / workshop will be developed. Access roads / haul roads from topmost bench to benches at lower



levels shall be developed gradually. As mining operations advance to lower levels, larger face lengths and width shall be available. Face management, which is a continuous process, shall be taken into account to secure shortest (average) lead distance up to crusher / dump yard as also to prevent clustering of dumpers. Following activities shall be undertaken during quarry development phase:

- Removal of vegetation and top soil to expose quartzite beds
- To make the access road to the mine working area.
- Provision and construction of access roads from ground level to mines office complex, workshop, entrance to mine faces
- Development of haulage road from proposed crusher location to the floor of initial mining areas at a slope of 1 in 20 is proposed (not exceeding 1 in 16 except for ramps)
- Making of parapet wall/retaining walls along gradient of haul road.
- Construction of mine office, first aid station, crèche, canteen, workshop and other ancillary infrastructural facilities shall also be undertaken during first and second year of developmental activities.

4.3 MINING OPERATIONS:

The mining operations will comprise of following activities for excavation of mineral.

- a) Drilling of "Down-the-Hole" holes as per specified pattern.
- b) Blasting of holes
 - I) Primary Blasting
 - II) Secondary Blasting
- c) Loading of blasted material by deploying hydraulic excavators
- d) Transportation of material to Crusher

Thus, these mining operations shall be carried out by fully mechanized opencast method utilizing Heavy Earth Moving Equipment (HEMM) in conjunction with deep hole drilling by crawler mounted DTH drills and blasting. To start with



benches shall be kept narrow and then gradually widened. To the extent possible, benches shall be kept along dip and advanced along the strike to give a fairly well blended material in each bench. The direction may be varied in due course based on experience gained, to give wider benches, longer faces and proper alignment along haul roads / ramps.

4.4 Mining Parameters:

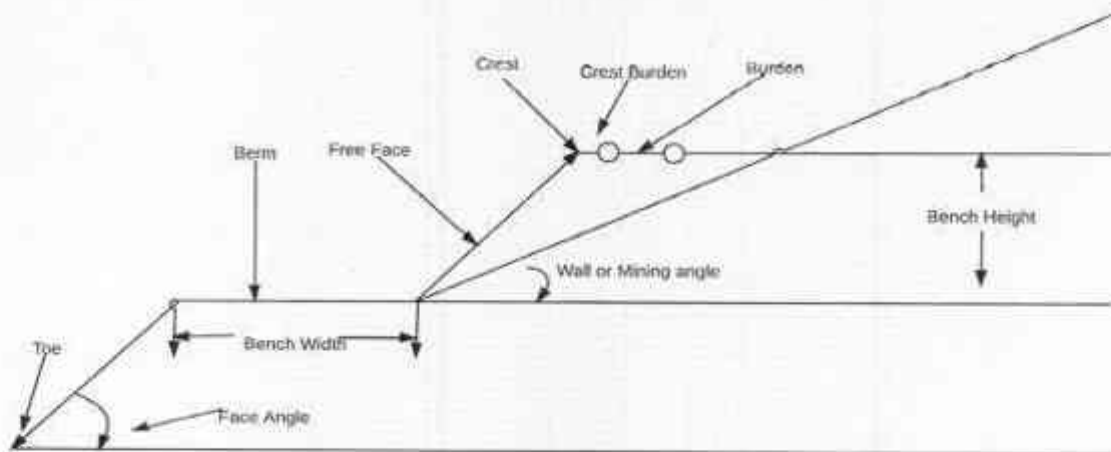
4.4.0 Bench height & Bench Width: The Regulation 117 of MMR, 2012 stipulates that In all mechanized opencast working, the following precautions shall be observed, namely:-

- (a) Before starting a mechanized opencast working, design of the pit, including method of working and ultimate pit slope shall be planned and designed.
- (b) The height of the benches in overburden consisting of alluvium or other soft soil shall not exceed 5 metres and the width thereof shall not be less than three times the height of the bench and the height of the benches in overburden of other rock formation shall not be more than the designed reach of the excavation machine in use for digging, excavation or removal;
- (c) The width of any bench shall not be less than –
 - I. the width of the widest machine plying on the bench plus two metres, or
 - II. if dumpers ply on the bench, three times the width of the dumper, or
 - III. the height of the bench, whichever is more;

Therefore considering the requirement of Regulation and keeping in view the dimensions of heavy earth moving equipment following mining parameters are considered: Since the host rock quartzite is hard and compact, the same parameters are considered for making benches. In view of mechanized method of mining to be adopted; the bench height is proposed 9.0mtrs and bench width 10 mtrs. Formation of benches in this manner will result in an overall safe slope of 50°.

Bench Height	9 m
Bench Width	11 m at least
Bench Slope	15° to the vertical
Sub-grade Drilling	01 m (10% of height)
Depth of DTH Hole	10 m
Diameter of hole	100-110 mm





SCHEMATIC DIAGRAM SHOWING MINE TERMINOLOGY

4.4.1 Face length:-

Since one pit is planned to develop in the area to obtain targeted production, the optimum face length available along the strike length is sufficient to cater to the optimum production required. The face length will attain the maximum face length at the end of 1 st year.

4.4.2 Bench alignment: -

The benches are gradually aligned to give a regular shape. In general the benches will advance in all directions parallel to each other. Since geological formation in the area is of simple nature, there will not be difficulty in maintaining the proposed bench alignment.

4.4.3 Depth of pit:

The reserves up to 30m below the valley level are proposed to be worked are sufficient to cater the needs of the applicant. The surface level reserves will not be depleted during the next 10 years. The workings will start at 391 MRL and will reach up to 229 MRL at the end of 5th year as detailed in the year wise plans plate no.5-9 and sections plate no.10.



4.4.4 Pit Limit and Final Slope Angle

Quartzite rock is hard and compact. Once the pit reaches the ultimate limit, it is necessary that it does not start collapsing due to weathering and other effects. This can be achieved by planning ultimate pit slope at a maximum of 50 degree to avoid collapse of the pit sides. There is no overburden except a thin soil cover. Entire mineral produced will be useful. The final extent of mining operations is shown on **Conceptual Plan**. The final slope angle shall be 50 degree.

4.4.5 Level of Production (Year wise Production for First 5 Years)

It is proposed to work the mine from top down ward for which a mine road is proposed between 259 MRL to 391 MRL. About 2176 meter length will be developed during first year. During the making of road, mineral will be mined (2176x10x5x2.5=2.72lakh ton.) The position of benches and the production from individual benches year wise is as follows

Year	Bench level At the end of each year	Production in Lakh Tones	Total Production in lakh Tones
1st	391	1.14	42.78
	382	1.78	
	373	3.97	
	364	7.51	
	355	11.32	
	346	16.56	
2nd	337	17.33	60.00
	328	18.27	
	319	16.23	
	310	8.17	
3rd	310	8.16	60.00
	301	15.76	
	292	16.07	
	283	14.52	
	274	5.49	
4th	274	8.44	60.00
	265	13.25	
	256	13.28	
	247	25.03	
5th	247	16.43	60.00
	238	36.14	
	229	7.43	



During the plan period the benches will be advanced as shown in Plate No. 5-9 and sections at Plate no.10 to achieve the targeted production.

4.4.6 Proposed Level of production when the mine fully developed

It is aimed to prepare this Mining Plan for 60, 00,000 MT mineral production. The required rate of production shall be achieved by the end of 2st year. The rate of production shall be maintained up to lease period.

4.4.7 Mine able Reserves and Anticipated Life of the mines

As discussed in the chapter of geology, the in situ geological reserves are calculated 8,63,80,900 MT .As per the proposed method of mining and occurrence of mineral 80% geological reserves (6,91,04,720 tones) are mineable The life of the mine is therefore assessed as 12.0 year at the proposed rate of 60,00,000 tons of mineral / year.

4.4.8 Proposed Method of Mining

The present mining operations are designed to be carried out by open cast mining means. The entire mining operations proposed are mechanized. Apart of mining, the loading and transportation up to stack yard shall be done mechanically. It is proposed to load in the trucks/dumpers directly to the destinations and mineral is not usually put up in this stack yard to avoid the double handling. In the present operation the bench height shall be 9mtrs. Each bench will advance one by one. While carrying out the mining operations in accordance with the above provision the overall pit slope shall be maintained the 50° the mineral bearing rocks being hard and compact.

4.4.9 Extent/Level of Mechanization with Types of Machineries Used.

In view of the proposed planned production of 60,00,000 MT per annum the life of the mine is calculated 12.00 year , however as this lease is granted for 12 years only, accordingly conceptual mine plan is considered. However the life



may vary depending on the demand and the quality and reserves of the deposit. The designed rated capacity for mineral production during the next five years, 2014-15 to 2019-20 when mines are operating at full rated capacity is as given below :-

Sr.no	Parameters	Details
1	Production per Annum	60,00,000 MT
2	No. of operating days per annum for mine	300
3	No. of operating shifts per day	02
4	No of schedule hours per shift	8.00
5	Actual Utilization hours per shift	5 to 6.5

The breakup of land use at present, at the end of 5th year and at the end of the Life of Mine is detailed as under:-

Land use pattern (Atela Kalan Stone Mine)

S. No.	Land Use Category	Present	At the end of 5 th Year	At the end of Life of Mine
1.	Waste Dump (Soil)	-	2.20	-
2.	Reclamation (Water body)	7.70	26.30	27.56
	Total Excavated Area	-	28.50	27.56
3.	Road	1.68	2.08	2.08
4.	Infrastructure (Administrative building crusher etc.)	0.16	0.18	0.18
5.	Town Ship Area	-	-	-
6.	Afforestation & Green belt (Including plantation on Dump area, Road side, along the pits/dead benches)	-	3.40	18.91
7.	Mineral / Sub-grade mineral Storage	-	-	-
8.	Undisturbed area	44.46	19.84	5.27
	Total	54.00	54.00	54.00



4.4.10 OPERATING DAYS PER ANNUM

The mine shall be operated on 2 shift basis (each of 8 hours duration) per day with operating days per annum be 300 days. The actual effective utilization of HEMM per shift is estimated as 75% i.e. 6.0 hours per shift. This can however be optimized with experience.

4.5 EXTENT OF MECHANIZATION

To arrive at optimum number of heavy earth moving equipment, following assumptions are considered:-

- No. of shifts per day : 2
- Specific Gravity of quartzite : 2.5
- Availability of Equipment : 75%
- Fill factor of excavator bucket : 0.80
- Hours of working per shift : 6.0
- Average Haul distance : 08 km (one side)
- Speed of dumper : 30 Km/hour
- Penetration rate of drill machine : 10 mtrs/hour
- Excavator Capacity chosen : 3.9 cubic m
- Dumpers capacity : 50 T
- Drill Capacity : 100-110 mm
- Powder factor : 8T/Kg of Explosive

4.5.1 Equipment Capacities Required

The designed rated capacity for mineral production during the next five years, 2014-15 to 2019-20 when mines are operating at full rated capacity is as given below:

- Production for first 5 years : 28278000 T
- Average production per year : 56.55,000 T
- Production per day : $\frac{56,55,000}{300} = 18852$ T



- Production per shift : 18852/2= 9426 T
- Production per hour : 9426/6=1571 T
- No. of operating days per annum for the mine : 300
- No. of operating shifts per day : 2
- No. of scheduled hours per shift : 8
- Actual utilization hours per shift : 6

4.5.2 Drilling Machines

The number of drill machines as envisaged to be provided is given in the Table below. The calculations regarding adequacy are given below:

Table Operational Parameters

Item	Limestone and Waste bench
Bench height (m)	09
Hole inclination	15° to vertical
Hole depth (m) including sub-grade drilling	10
Burden (m)	3.0
Spacing (m)	4.0
Volume (m ³)	3.0x4.0x 10.0 = 120
Tonnage yield (t)	120x2.5=300
Mineral blocked per meter of hole length	300/10=30 t (Tonnage Yield/depth of hole
Tonnage to be drilled per hour	1531 t (Production per Hour)
Meters of Drilling required	1531t/30 t = 51.03 m
No of drill to be provided @drilling rate of 10m/hr	51.03/10=5.1
20% allowance for maintenance & breakdown	1.02
Total Drill m/c required	5.1+1.02=6.12 say 6 nos



Table Drilling Equipment and Compressors

Sl. No.	Type	Nos.	Dia of Holes (mm)	Size / Capacity	Motive Power	H.P.
1	Crawler Mounted DTH drill machine with Compressor	06	100-110	Adequate to drill up to 30 m.	Comp. Air365 cfm	N.A.

4.5.3 Loading/ Excavating Equipment

The number of loading / excavating equipment as envisaged to be provided is given in **table below**. The calculations regarding adequacy are given below:

Table-Number of Loading / Excavating Equipment

Parameters	
Hydraulic Excavator	3.9 m ³
Fill factor	0.8
Swell Factor	1.5
Loading Cycle time for one bucket (Swing, hoist, crowd)	48 sec.
Average Cycle time @90% efficiency	54 sec
Dumper Capacity	43.5 cubic M
Shovel Dipper Capacity	3.9 x 0.8=3.12 cubic m
Dumper effective Capacity	43.5x 0.8=34.8 cubic m
Dumper capacity in t (34.8 cub m x 0.8 x 0.85) x 2.5	59.16 t
Availability of excavator	80 %
Utilization of Excavator	85%
Possible working hour per shift	6.00
Effective Dumper capacity in T (34.8cub m x 0.8 x 0.85 x 2.5)	59.16 t

Shovel productivity in tons per hour are determined by dipper size, swing time, dumper capacity and dumper spotting conditions and is calculated as follows:

$$\text{Tonnes /hr.} = \frac{60 \text{ min}}{((\text{Dumper size m}^3/\text{dipper size m}^3) \times \text{Swing time}) + \text{Dumper spotting time}} \times \text{Dumper size (t)}$$

$$\text{Tonnes /hr.} = \frac{3600}{((34.8/3.12) \times 54 \text{ sec}) + 90} \times 59.14 = 307 \text{ TPH}$$

Hence Shovel Productivity in Ton per hour comes to be = 307 TPH



Annual operating Hours :

No. of days x No. of shifts x % Availability x % Utilization x Hr/shift = Op. Hrs.

Annual operating Hours = $300 \times 2 \times 0.80 \times 0.85 \times 6.0 = 2448$ Hrs.

Shovel Fleet requirement = $\frac{\text{Annual Production (tons)}}{\text{Annual operating Hrs. x Tonnes per hour}}$

Shovel Fleet requirement = $\frac{56,55,000 \text{ T}}{2448 \times 307} = 7.52$ say 8

Thus Eight Nos of shovels will be required.

Table-Loading/ Excavating Equipment

S. No.	Type	Nos.	Bucket capacity in m ³	Motive Power	H.P.
1	Hydraulic Excavators	08	3.9 m ³	Diesel	380-400

4.5.4 HAULAGE AND TRANSPORTATION EQUIPMENT

It is proposed to transport mineral from the faces to the crusher by 43.5 Cubic m off highway rear dumpers. The number of equipment proposed to be provided is given in **Table** below. The calculations regarding adequacy are given is given below:



Table Operational Parameters

Parameters		
Dumper capacity		43.5 cub m
Load per pass of loading equipment for blasted Mineral		3.9 cub m x 0.8 (fill factor)= 3.12 x 2.5= 7.8 T
Speed of loaded dumper on hilly terrain		30kmph
Average cycle time of excavator		48 seconds
No. of passes required to load the dumper		59.16/7.8 = 7.5 say 8
Time for loading a dumper		54 * 8 = 432 sec. (7.2 minutes)
	Mineral	
Lead in Kms from face to crusher		05
Waiting & Spotting time at face (min)		2
Waiting, Spotting & unloading at Crusher		2
Time taken for loaded trip in minutes		12
Time taken for empty trip in minutes		10
Time taken per round trip in minutes (min)		26
Load that can be transported per hour (2 trips) x 59.16 T		118.32 say 119
Load to be transported per hour		1571
Dumpers required		1571/119 = 13.20
20% allowance for maintenance/repair/breakdown		2.64
No of dumpers required		15.84
Total no of dumpers required in limestone and overburden		Say 16

Table-Haulage and Transportation Equipment

S. No.	Type	Nos.	Size / Capacity	Motive Power	H.P.
1	Rear Dumper (Size 43.5 Cubic meter)	16	43.5 Cu m	Diesel	380-400

Summary of the Requirement of Heavy Earth Moving Machineries as calculated above for Handling of about 60,00,000 T of Mineral Per Annum



S.No.	Equipment	Size	Effective Tonnage	Nos
1	Hydraulic Excavator	3.9cu.m	$3.8 \times 0.8 (\text{fill factor}) \times 2.5 (\text{Tonnage factor}) = 7.6 \text{ T/Bucket}$	8
2	Rear Dumper	43.5cu.m	$22.5 \times 0.8 (\text{fill factor}) \times 2.5 (\text{Tonnage Factor}) \times 0.8 (\% \text{availability}) \times 0.85 (\% \text{Utilization}) = 30.06 \text{ T}$	16
3	Drill Machine	100-110 mm dia	@ 10 meters per hour	6
4	Compressor	365		6

4.5.5 MISCELLANEOUS / ANCILLARY EQUIPMENT

In addition to above, miscellaneous / ancillary equipment shall also be provided for dozing, (construction / maintenance of haul road, clearing of benches / haul roads, making of heaps of blasted limestone for efficient loading etc.), suppression of dust along haul roads and at faces, transport of men, explosives and other materials, breaking of blasted boulders to size acceptable at crusher etc. as given in Table below:

Table-Miscellaneous / Ancillary Equipment

S. No.	Type	Nos.	Size/ Capacity	Make	Motive Power	H.P.
1	Bull Dozers	1		To be decided	Diesel	450
2	Motor Grader	1		To be decided	Diesel	165
3	Hydraulic Rock Breaker	2	Mounted on 18-21 ton Class-ass hydraulic excavator	To be decided	Diesel	110
4	Explosives Van	1	05 Ton	Tata / Leyland Chassis	Diesel	110
5	Tractor with Trolley (Pickup)	1	5 ton capacity	Escort / HMT	Diesel	50
6	Jeeps / Van	2	Double drive axle	To be decided	Diesel	40
7	Water Sprinkler	1	10 KL	Tata / Leyland Chassis	Diesel	110
8	Diesel Tanker with metered pumping arrangements	1	5-10 KL	Tata / Leyland Chassis	Diesel	110
9	Mobile Maintenance Van	1		Mounted on Tata / Leyland chassis	Diesel	110
10	Ambulance	1			Diesel	50



CHAPTER 5 BLASTING

5.1.1 BLASTING PARAMETERS

The quartzite being medium hard category mineral requires drilling and blasting for excavation. To maintain a bench height of 09 meters, drilling by 100-110 mm dia DTH drill machine, is recommended as a guide line to start with. powder factor (PF) on an average of 8 ton per kg of explosive in the initial stages. However in future effort will be made to improve upon it. Blasting frequency is recommended as twice in every six days (i.e. twice a week). Benches shall be kept sloped at an angle of 15° from the vertical. (i.e. 75° from the horizontal) Same angle of slope shall be maintained for drill blast holes also. With 09 m. high benches, sloped at an angle of 15° to vertical, the bench slope height shall be 10.3 m. and with sub-grade drilling of 10% of the depth of shot holes to be drilled shall be 10 m.

Types of explosives to be used will be ANFO, slurry, emulsion etc. will be used for blasting. Since ANFO is cheaper and economical, it will be used as much as possible except in rainy season. Delay detonators or Nonel detonating fuse will be used since multi row system of firing will be carried out so as to reduce the ground vibration, noise, fly rock etc. due to blasting. Sequential blasting techniques using sequential blasting machine shall be used to reduce explosive charge per delay to a minimum to reduce ground vibration.



Blasting parameters for quartzite having 09 m average height are given in Table

Item	Values
Bench height (m)	09
Hole depth (m) (including sub-grade drilling)	10
Burden (m)	4.0
Spacing (m)	5.0
Volume (m ³)	4x5x9=
Tonnage yield (t)	180x2.5=450 T
Powder Factor (assumed)	8t/kg of explosive
Charge per hole (kg)	450 T/8 = 56.25 Kg
Total quantity of rock to be Broken per day (ton)	60,00,000 t/ 300 days = 20,000 TPD
Explosive required for blasting per day	20,000/8 =2500 kg
Blasting Frequency (Every day)	1
Explosive required per blast per day	2500 kg
No. of holes per day	20,000 t (Production/day)/450 t (Tonnage per hole)=44.44 say 45 Holes
No of holes per blast	45

It is recommended to carryout detailed ground vibration studies to study the effect of deep hole blasting operation, during the first year of mining operation, to suggest the measures to mitigate the adverse effect, if any, and to carry out safe and smooth blasting operation.

The explosive charge per hole shall be 25% (20% to 30%) of the charge being booster charge and the balance 75% (80% to 70%) consisting of column charge (ANFO is proposed) .

The pattern of initiation adopted affects the standard of fragmentation, muck profile after blast, ground vibrations caused, noise generated, fly rock, air blast etc. At this mine, square/ rectangular / staggered grid, multi row pattern, or extended V pattern



shall be adopted to start with and later on based on experience gained the pattern to be adopted in future shall be standardized.

Long / short (ms) delays shall be used. This will help in reduction of ground vibrations, back break, fly-rock, air blast etc.

The charge per delay shall be optimized , based on experience gained and after conducting scientific studies for determining peak particle velocity and other related parameters to keep ground vibrations, air blast, fly-rock etc. within optimum limits.

Each round shall yield about 9990 ton of mineral. 2 such round of holes shall be fired per week, subject to suitable length of faces being made available. It will give about 20,000 tonne of blasted material. This is considered to be adequate to feed the crusher for 6 working days of the mine (7 working days i.e. one week of the plant) for five years.

Considering the nature of strata / deposit and height of the bench, no decking shall be resorted to. However, in future, decking may be adopted if considered necessary.

5.1.2 Type of Explosives to be used

Being cheapest and hence cost effective and economical, besides being safe to handle and store, and non-cap sensitive, ANFO is most popular. For this purpose, free flowing granulated (prilled) ammonium nitrate is mixed intimately with about 6% by weight of Diesel Oil No.2 (Flash point not less than 38^o C.) Keeping in view the quantity of AN to be mixed with FO mechanical mixing and loading arrangements at site shall be used. Such arrangements shall in addition give a more homogeneous mixture of AN with FO.

Nitroglycerine (NG) based explosives, slurries / emulsion based) to the tune of about 25% shall be used as booster charge in the holes. The top of the hole shall be charged with about 75% of column charge namely ANFO. ANFO however is hygroscopic and cannot be used in watery holes. In such cases, the shot holes should be dewatered or alternatively ANFO will be used duly packed in plastic tube bags. Such ANFO filled plastic



tube bags can be lowered in the holes in conjunction with additional weight such as sand etc. (due to low density of ANFO as compared to water, it may otherwise result in the bags floating in the holes).

5.1.3 Powder Factor in Mineral (Quartzite)

To start with, it is proposed to use 1 kg of explosives for breaking / blasting 8 ton of rock. This charge ratio is referred to as "Powder Factor or PF" Based on experience gained on such sort of deposits, PF may be optimized at a later date.

5.1.4 Secondary Blasting

Quartzite deposit being massive, about 6% - 10% of the boulders generated on blasting may be too large to be fed directly to the crusher and need secondary breaking / blasting. Secondary drilling and blasting may be necessary to reduce these oversize boulders to acceptable range. For secondary blasting, (size reduction) pop shooting (in 25-32 mm dia holes to be drilled by hand held jack hammer drills up to a depth of about 1/3 to 2/3 of the boulder depth) is normally carried out.

Or alternatively, considering the large production targets , secondary breaking of large boulders may also be carried out by use of hydraulic rock breakers mounted on 18-20 ton class hydraulic (back-hoe configuration) excavators. This will obviate the necessity of withdrawal of men and machinery from the faces at the time of secondary blasting and thereby increase the utilization % of HEMM.

5.1.5 Storage of Explosives (Capacity and Type of Magazine)

Licenses for storage transport and use of explosives will be obtained from concerned statutory authorities. No magazine is constructed in the leasehold area till date. No storage, transport and use of explosives is done in the mines till date. Blasting will be started after obtaining all necessary clearances from the concerned statutory authorities.



- Explosive Magazine means any building licensed under Indian Explosive Act,1884

Proposed Capacity of Magazine:-

- Mineral to be mined during 1 year = 60,00,000 T
- Production of mineral per day (300 days/year)= 60,00,000/300=20,000 T
- Explosive requirement per day (PF- 8 T/Kg of explosive used :20,000/8=2500 Kg
- Explosive consumption per year = 300 days x 2500 kg= 7,50,000 Kg= 750 T
- Explosive consumption per month= 7,50,000 kg/12=93,750 kg or say 94 T
- Use of ANFO will be 80% of total explosive used per month = 80% of 94 T= 75.2 T
- Use of High Explosive will be 20% of total explosive used per month=20% of 94 T
T=18.8 T

Magazine Capacity of 2 months consumption of explosive (10 T-Explosive Magazine) will be appropriate for undertaking the blasting five times per week with the given production capacity of the mineral.

Ammonium Nitrate storage shed is also to be maintained of at least 15 T capacity.

2-months consumption of ANFO= 75.2 x 2= 150.40 say 151 T

2-months consumption of High Explosive=18.8x2= 37.60 say 38T

Electric Detonators: 1000Nos

Detonating Chord -10,000 mtrs

ANFO shall be stored separately under the roof for 22 T capacities.

With a License for Purchase and use, explosive magazine of permanent structure or portable magazine can be installed close by to project and continue to purchase as per requirement from authorized dealer. At no time explosive stored should not exceed licensed quantity.



Or alternatively Tie up with a explosive supplier maintaining a magazine with a License to Purchase, Sell and Use. This agency can bring explosive (sell) as per requirement and use in the project premises. This system is recommended, as per contents of Indian Explosive Act, 1884 as this system will avoid construction of explosive magazine in mine premises ensuring safety.

5.1.6 : Precautions to be observed during drilling and blasting :

Necessary precautions as enumerated under clause 106 (2b) of MMR-1961 shall be observed during blasting.

- Preparation of charge, charging and stemming of holes will be done by a qualified blaster.
- Before a shot is charged, stemmed or fired, sufficient warning by signal is given over the entire area falling within the danger zone and ensure that all persons within such area have taken proper shelter.
- The controlled blasting shall be done by using delay detonators to prevent flying fragments which may cause injury to local inhabitants within danger zone.
- Proper inspection after shot firing will be done the blaster.
- The numbers of shots which exploded shall be counted by the blaster to assess misfire.



CHAPTER 6

MINE DRAINAGE

6.1 GENERAL:

Open cast mining projects requires effective arrangements for drainage and provision of adequate dewatering capacity in the pits under mining. In the area under mining water can reach the workings from surface drainage, rainwater and due to seepage through joints and fissures. Therefore, the problem can be solved by preventing drainage water from entering the pits on one hand and pumping out the percolated and direct rain water from the pits on the other hand .The general water table around the lease area at 45 meters below ground level.

6.2 Drainage Around and Within Mine:

The hill is mainly sloping both east and west direction. The mining area will become a depression during the next 12 years, which warrant accumulation of water during rainy season. A scheme is proposed to prevent the accumulation of such water.

- 1) Drainage as shown in the mine plan (Plate no 5-9) shall be made all round the pit to prevent the entry of surface/ rain water inside the pits.
- 2) All the benches will be provided with mild inward slope to keep the benches in drained condition. Provision of sumps is provided as shown in Plate No 5-9. The lowest bench shall be slightly sloped towards the sump so that the entire drain water goes to the sump.
- 3) The working faces will be advanced with a mild upward gradient to facilitate the drainage. The water shall be gradually drained from the upper most bench to the lowest bench and then ultimately to the sump.



- 4) Similarly in the ultimate pit position, large sump will be provided at the pit bottom to accumulate drained water as well as direct rain water.

6.3 DEWATERING:

Since the depth of mining proposed is well above the valley level and water table, there will be no chance of encountering the ground water table during the mining operations. Hence normal-pumping operations will be required during the monsoon season only. The water accumulates within the pits will be due to direct rainfall over the pit and seepage from adjoining areas, if any.

- 6.4. The average rainfall of the district during all these years is 420 mm only.

6.4.1 An examination of the above reveals that the rainy season extends from June to September. Although in the above period under consideration there has been rainfall in other months also, but it can be considered as stray occurrence and will not affect the proposed pumping scheme.

6.4.2 The water to be pumped out from the open pits will be contributed both by direct precipitation over the open pits and seepage. The water due to direct precipitation will depend upon the rainfall and the area of the pit.

6.4.3 Based on the rainfall records, the sumps of the sizes as shown plates No. 5-9 shall be provided at the bottom most bench. During the monsoon period a continuous process of dewatering the sumps shall be there to facilitate the mining at the lower benches.

6.4.5 Based on the Rainfall data it is proposed to have a diesel engine operated water pump of 7.5H.P which may dewater $20\text{m}^3/\text{hour}$ from the pit. The water will be sent to the drain of 0.5mtr depth as shown in the year wise plans Plate No .5-9. This water will finally go into the natural nalla.



CHAPTER 7

STACKING OF MINEAL REJECTS AND DISPOSAL OF WASTE

7.1 Disposal of Waste

Soil: There is a thin soil cover 10 – 20 cms at places. In little amount of soil is also generated from joints and cracks.

Soil and powder of quartzite will be stacked separately

Rejects: - Entire mineral produced is usable.

7.2 Maximum Height and Slope of Dumps

The area ear - marked for the stacking the soil mixed finer material of stone is 8000 M2 Plate no 5-9 which can accommodate at least 12,000 MT of material. In the present case soil generated contains fine powder of quartzite; the same shall be sorted out and stacked in separate dump yards. Yearly generation of soil/ fines which only 10,000 tones shall be used for plantation and as a upper layer on the dumps. The dump may attain a maximum height of 6 mtr. With gentle slopes of 30°. Tow walls and drains around dumps are proposed to safeguard the dumps

7.3 Dump Yard for mineral

It is proposed to have a dump yard for mineral (size 140m x 100m)

As it is not always possible to directly send the mineral to the crushers/ consumers. It is proposed to stack the mineral in the event of less demand or any other reasons to store the mineral in the dump yard. The height of the dump yard may attain a maximum of 8 m with moderate slope of 39 degrees. This can accommodate about 2,80,000 MT mineral.

The location of the soil and dump yard is between BP-2 and BP-5 and the same is shown in Plate no.5-9.



The annual quantum for construction of retaining walls/ dump yards for soil and mineral will be done during plan period. The length of the soil stack yard and dumping yard walls will be 360m and 480mtr. all along with height of one meter. Rest of the height will be made in the coming years as per the requirements of dumps. The thickness of the wall will be half meter.

As already described the optimum height of dumps shall be kept 8 mtr. With gentle slope of 30° for soil stack and with moderate slope of 39° for rejects/ inter burden stacks.



CHAPTER – 8

USE OF MINERAL

Road metal and Masonry Stone

The entire mineral produced will be used in the building industry as road metal, crushed metal and dust etc after crushing by the crushers.. The mineral will be sold to buyers in and around Haryana, Delhi and other states of north India.



CHAPTER – 9

MINERAL BENEFICIATION

In view of the availability of direct market for building stone R.O.M., presently there is no proposal of beneficiation. R.O.M. Mineral will be sold to various crushers located in the area. Part of the building stone product will be sold in the form of lumps to the crusher owners.

However, a part of ROM is proposed to be crushed at site through a crushing & screening plant proposed to be installed at project site as per indicative flow sheet shown at fig. here below. The crusher is proposed to be operated through Diesel Generating Set till the electrical connection is made available at project site. Details about proposed crusher setup is as follows –

Hopper	Steel Hopper with RCC Support of 50 M3 Live Capacity
Feeder	Vibrating Grizzly Feeder with 40 KW Motor
Primary Crusher	Jaw Crusher with 110 KW Motor
Secondary Crusher	Impact Crusher with 200 KW Motor
Screens	Vibrating 3 Deck Screens (Three Nos with 40 KW Motor each)
Conveyor	800 mm & 1000 mm Conveyor Belts

Hopper, Primary Crusher & Secondary crusher is proposed to be installed with full covered shades. All screens & conveyors will have metallic cover to avoid any dust emission. Discharge chutes are proposed with rubber curtain for controlled material discharge. High pressure water spray through high pressure pump and compressed air is



proposed along primary hopper, discharge conveyors and primary/secondary crusher for effective control of dust emission.

Total water requirement for envisaged wet dust control system is assessed to be 10,000 Ltrs per day and as such there is no discharge of waste water.

For the proposed mineral processing (crushing) there is no chemical use involved. Furthermore, all the material crushed will be sold to end users and as such there is no waste product/ tailing waste.

Due permission, Consent to establish and Consent to operate shall be taken for installation of crusher from the department of pollution, Govt. of Haryana.



001000 medium
Limestone
1

SD 2.6 tnc3
Cr 40 %
Abr 434 grt

2 VF551-2V (Vibrating Feeder)

300 t/h
2400
Opening 30 mm
320

Grizzly Feeder

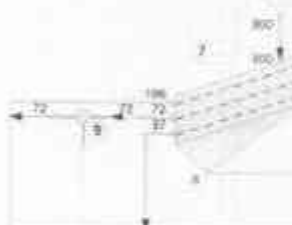
TK13-20-3V
400 mm x 2000 mm

3
C110
quarry

71 %
Feeding 100 t/h
Jaw
Crusher



CVB1845-3P 3 Deck
Vibrating
Screen



PRODUCTION 0/20 mm
PRODUCTS

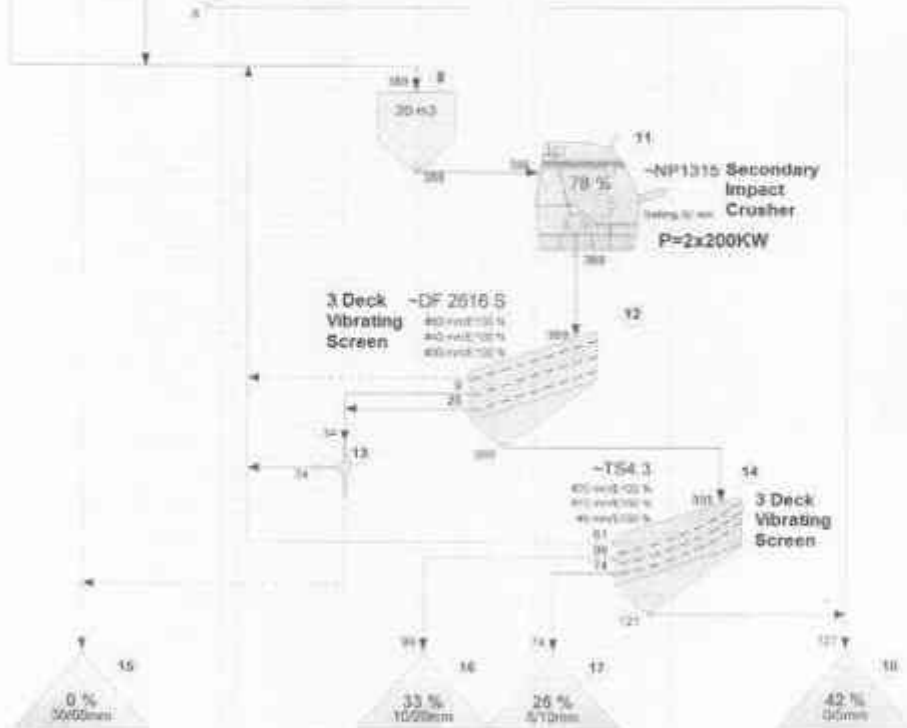
NP1315 Secondary
Impact
Crusher
P=2x200KW

3 Deck
Vibrating
Screen

DF 2516 S
40 mm x 2000 mm
40 mm x 1000 mm
80 mm x 1000 mm

TS4.3
80 mm x 2000 mm
40 mm x 1000 mm
80 mm x 1000 mm

3 Deck
Vibrating
Screen



CHAPTER 10

SURFACE TRANSPORT

The transportation of mineral from pit head / stock yard to the consumer end crushers / traders will be carried out by the trucks of purchaser of generally 25 MT Capacity. There is all weather metaled road and then a katcha road right up to mines to dispatch the material from mines to the market. It will be purchased by the parties at mine site and transported by them through their own arrangement of trucks. The practice is quite sound in the area and ensure continuous lifting of the material. Customers/purchasers come with transport arrangement of their own. However necessary arrangement of trucks can be done from the nearby truck operators union available at CharkhiDadri. Here, it is pertinent to mention that there is existence of Kachacha road from mine to state high way via boundary pillar BP-1 which does not cross through any village and any sort of hindrance from vehicle movement is not anticipated and hence no threat to near bye dwellers.



CHAPTER -11

SITE SERVICES

11.0 Site Services:-

11.1 Manager's Office:-

As detailed in the preceding chapter the mines are designed to produce some 60,00,000 ton of building stone per annum. The activities shall be supervised by one competent person, one mining mate cum blaster to supervise the drilling and blasting operation. Since this is very small mines. The office of Manager 5 m x 3 m shall be provided for mine supervision staff.

11.2 Canteen -cum-Rest shelter:-

In order to provide the rest shelter for the personnel working in the mine and also to provide tea/refreshment etc.as per the Mines Act,1952. The arrangement shall be made to install a rest shelter-cum-canteen as shown in plate no.4 and shall be utilized by the workers. The rest shelter will be for having rest during the lunch hours by the operators/ labor. The size of rest shelter shall be about 15 x 3 meter to accommodate the working labours.

11.3 Store:-

Since the mining operation will involve heavy earth moving machinery, a small storeroom will be provided for day to day operations. No provisions for a separate workshop is being made as the heavy repairs will be carried out elsewhere

11.4 First Aid Room:-

To provide the first aid for any sort of injuries encountered during the mining operation, one small first aid room shall be provided. First aid kit and sufficient stock of material / medicines needed for first aid shall be provided as per



requirement. As the mining engineer / Manager and mining mates are qualified first aiders they can provide first aid to the labor on the spot. More ever the Govt. Hospitals is there at the CharkhiDadri which is just 15 km. From the mine and necessary medical aid can be provided from there.

11.5 Crèche:-

At present provision of crèche is not provided, however in future if women workers are employed, arrangement for a small crèche shall be made as per the requirement.

11.6 V.T. Center:-

Necessary arrangement shall be made for conducting refresher course as laid down in Mines vocational training rules.

11.7 Magazine:-

A magazine of the required size will be provided to fulfill the requirement of blasting of mineral as detailed in the chapter of Blasting. The Magazine shall be erected as shown in the enclosed plate no 5-9 . The design of the magazine shall be as per approval of the chief controller of Explosives, Govt. Of India.The magazine shall be properly fenced and provided with as security guard round the clock.

11.8 Electricity Supply:-

Presently there is no arrangement for supply, at the mine but it is proposed to take an extension of the electricity line from the nearby point which is jus0.5 Km from mines site.

11.9 Water Supply:-

The water supply for drinking purpose proposed will be made available by hired tractor tanker. The water will be taken from the village Public water supply



which is just 0.5 km .Away from the mine site and is controlled by the public health department of the state Govt . The water form supply tube well is used for the entire village Atelakalan. Therefore the same arrangement shall continue for the mines as well. The water shall be transported by the tractor and stored in a syntax tank of 10000 liters capacity.

11.10: Provision of Work shop:-

Work shop shall be provided in mine office vicinity for routine, periodical and break down maintenance of heavy earth moving equipment and allied machineries.



CHAPTER 12

EMPLOYMENT POTENTIAL

12.1 General Consideration

In this project the mechanized mining is proposed for production of building stone. The proposed organizational structure for the project is worked out in view of the type of mining system adopted and the need of effective environment Management Plan The requirement of various technical and non-technical personnel is determined while adopting the following norms :-

1. The mine will be worked in two shifts.
2. In estimating the requirement of magazine attendants, and provision of competent person, mates, blaster etc. due consideration has been given to the statutory.

12.2 Man power requirement and its distribution .As the applicant is willing to work the mine in two shifts. The following manpower is proposed.

S.No.	Designation	Category	Nos
1	Mines manager	Highly skilled	1
2	Assistant Managers	Highly skilled	4
3	Mining Mate cum Blaster	Highly skilled	4
4	Clerical and other staff	Skilled	3
5	Security Guard & Water man	Semi-skilled	3
6	Environment Assistance	Skilled	1
7	Diesel hydraulic shovel operator& back hoe operator	Highly skilled	14
8	Crusher Operator	Highly skilled	5
9	Rear dumpers operators	Highly skilled	26
10	Drill operators	Highly skilled	4
11	Track chain Dozer operators	Highly skilled	1
12	Grader	Highly skilled	1
13	Crane	Highly skilled	1
14	Heavy duty tow truck	Highly skilled	1
15	Tyre handler	Highly skilled	1



16	Water sprinkler	Skilled	1
17	Maintenance van driver	Skilled	1
18	Tractor operator/driver	Skilled	1
19	Tractor compressor operator	Skilled	1
20	Helpers/labour	Semi skilled	50
	Total		124

In addition to the above mentioned staff rest of the function i.e. supply of explosives, preparation and amendment of plans etc. shall be got performed from the professional on contract basis.



CHAPTER- 13

ENVIRONMENT IMPACT ASSESSMENT AND ENVIRONMENT MANAGEMENT PLAN

13.1 Base line information

13.1.i Existing Land Use Pattern :- The area is almost barren:

Land use pattern Atela Kalan Stone Mine –Present, After 5 years & End of Life of Mine

S. No.	Land Use Category	Present	At the end of 5 th Year	At the end of Life of Mine
1	Waste Dump (Soil)	-	2.20	-
2	Reclamation (Water body)	7.70	26.30	27.56
	Total Excavated Area	-	28.50	27.56
3	Road	1.68	2.08	2.08
4	Infrastructure (Administrative building crusher etc.)	0.16	0.18	0.18
5	Town Ship Area	-	-	-
6	Afforestation & Green belt (Including plantation on Dump area, Road side, along the pits/dead benches)	-	3.40	18.91
7	Mineral / Sub-grade mineral Storage	-	-	-
8	Undisturbed area	44.46	19.84	5.27
	Total	54.00	54.00	54.00

13.1.ii Water Regime:

There is no perennial water drainage on the ground. As the surface is undulated only seasonal Nallahs(rivulets) developed in the area.

13.1.iii Human Settlement:



Area covered under mining plan is uninhabited . The nearest village are Located 2 to 5 km. From the area under reference .The population of these villages as follows:-

Name of the villages	No. of house holds	Total population	Total Males	Total females
Rampura(4)	314	1963	1048	915
DohkaHarya(7)	474	2742	1434	1308
Dohka Moji(8)	192	1077	584	493
RehrodaKhurd(13)	57	369	191	178
RehrodaKalan(12)	216	1226	653	573
Bilawal(86)	386	2406	1273	1133
PichopaKalan(15)	484	2982	1565	1417
Bindraban(14)	117	765	410	355
PichopaKhurd(16)	408	2578	1372	1206
Tiwala(90)	451	2683	1476	1207
Shiswala(85)	405	2459	1284	1175
AtelaKhurd(87)	398	2297	1258	1039
AtelaKalan(88)	529	3144	1681	1463
Barsana(89)	324	1794	878	916
BirhiKalan(93)	718	4017	2108	1909
BirhiKhurd(95)	57	312	170	142
Pandwan(96)	445	2655	1430	1225
Mankawas(97)	648	4146	2237	1909
Dohki(107)	542	2978	1563	1415

13.1.iv

Public Building , Places and Monuments:

There are no permanent public buildings within the lease area. The permanent human settlement is about 0.5 to 5kms. From the lease area. There are no other public places or monuments within or around the lease area.

Infrastructure Facilities;

The following facilities already exist in the village mentioned above

(A) Roads:



All the village are well connected by public roads with nearby town of CharkhiDadri . Buses of Haryana Road ways ply regularly in these village.

(B) Power supply:

All the villages have got power supply from the State Electricity Board.

(C) Water Supply:

Water is supplied by the Public Health Department Haryana through water supply scheme to the entire village.

(D) Medical, educational, Post & Telegraphs Facilities:

A Govt. Hospital is available at CharkhiDadri which is Just 15 Km from the Mine site. All the nearby villages have Middle schools & Sub Post Office. College, I.T.I and other facilities are available at CharkhiDadri.

13.1.v

Quality of water:

There are no water sources in the leasearea excepts dry nallaahs(rivulets). The precipitated water flows along the slope of quartzite. The water table in the area is about 45 m. below the 255 MRL. No water samples could be collected in absence of any well/tube well in the lease area.

13.1.vi

Number and Type of Tress:

The area under reference has natural growth of vegetation. These trees generally grown in the area are mainly JungliKikar, The height of these trees are generally smaller than 3mtrs. In the neighboring villages and nearby fields tress of Neem, KikarJund trees, Kanji (peganiceclabra) etc. are observed. No rare species exist in the area. There are a number of small plants. The Av. density of vegetation is 50/hectares, those are mainly xerophytes.



13.2 Environment Impact Assessment Statement:

13.2A Land Environment:

13.2.A.i Land Scape:

Major part of the area is virgin with only 7.70 hectares covered by old working pits. The dwelling houses of the nearby villages are about 1 to 5km away from the lease area.

13.2.A.ii Aesthetic Environment

The panoramic view of the lease hold area reveals that the area has only one ridge. Since the present mining plan envisages the proper and systematic development of working and future alignment of the pits, plantation on lease boundary, haul roads and around office infrastructures, the whole area will present an aesthetic look.

13.2.A.iii Soil and Land Use Pattern

The area under reference has thin soil cover or a very thin cover, with soil embodied in the joints. The soil has to be excavated first and properly stacked. This Mining Plan envisages remarkable change in the present land use pattern, which will be more uniform and systematic at the end of 5th year due to proper mining and stocking the dumps at the earmarked places.

13.2.A.iv Agriculture:

There is no involvement of agriculture land where, mining is proposed. Therefore no impact on agriculture is envisaged in this mine plan.

13.2.A.v Forest:



There is no forest land in the lease hold area. Therefore, there is no impact of mining on the forestation except the proposal for additional plantation program which will enrich the aesthetic beauty of the area.

13.2.A.vi Vegetation and Wild life:

There is vegetation in the area as already explained. The mining activities has no adverse impact on the vegetation as the same shall be taken care of by growing additional vegetation, which is suspected to be destroyed due to mining. The same shall be compensated by planned plantation over dumping places. Since the present vegetation is of very poor quality the adverse impact will be negligible. However the proposed plantation will ameliorate the vegetation.

The area is not inhabitant by any significant wild life except stray existence of animals like Jungle rat, mangoes jackals etc. reptiles like snakes, lizard and birds like pigeon, bet etc and insects like scorpion spider etc. Due to stray population of wild life there will be no significant effect on the wild life due to mining. Moreover, the growth of vegetation of dumps etc. shall provide additional home for these stray animals.

By adopting the proposed reclamation plan, envisaging liberal plantation of vegetation of mixed species, it is expected to provide congenial habitant to promote wild life. After abandoning the mining operations the area can be converted into a bird sanctuary or a fish farm by having the close liaison with the state Govt. authorities.

13.2.A.vii Public Buildings, places and Monuments:

As already described at 13.1.IV. There are no permanent buildings, places or monuments in the lease area

13.2.B Water Environment:



13.2.B.i Surface Water and Ground Water:

There is no perennial drainage system in the mining area and while planning due care for drainage has been given. No significant effect on surface water regime is expected. The water table in this area occurs below 45-50 below general surface. Hence there will be no effect on the hydrology of the area as the working will not reach the water table. However, there may be some effect on the seasonal nallahs, which drain the precipitated water flowing from the area.

Further it is proposed to make necessary arrangements for developing rainwater harvesting of the mine water during rainy season. It is proposed to develop necessary bores and pits for this purpose. Thus rain water harvesting will ameliorate the ground water of the area.

13.2.B.ii Water quality:

There is no water courses in the area except dry nallahs. The precipitated water also flows along the depressions formed in between the outcrop of country rocks. The water table in the area is about 45-50 m below the ground surface.

13.2.C. Noise & Air Environment:

13.2.C.i Noise :

No test has been carried out to determine the present noise level. However, since this is an isolated area without any habitation industry the existing noise level in this area is well below the level at which normal speech communication may be interfered. The creation of vegetation barrier around the workings on both the sides of the roads and office buildings will also act as sound barriers.

13.2.C.ii Air:



Air pollution is expected during the mining of mineral, removal of overburden and operations of crushers in the area. The mining activities like drilling with down the hole drill machines, blasting by using high explosives and ANFO, loading of the minerals by excavators and its transportation from dumpers shall generate dust and which will tend to cause air pollution. The following measures shall be undertaken to curb generation of dust:-



Dust

The dust generation during drilling will be reduced by wet drilling. The dust generated during blasting will be minimized by water spray at the working faces before and after the blasting. The dust generated by excavation will also be controlled by spraying of water at the working faces. Dust generated due to plying of vehicles on mine roads will be dealt with by regular sprinkling of water on the roads. The sprinkling water will be done at short intervals using only a small quantity of water at each time just sufficient to wet the surface. Further the vehicles used for transportation of the mineral will not be overloaded to prevent generation of airborne dust during their movement.

The speed of the movement of the vehicles will also be controlled to minimize generation of excess dust. Further as far as possible transport of mineral from the mines will not be done during the evening hours of summer season when the relative humidity is low and wind speed is high. The volume of airborne dust raised from the waste dumps will be kept under control by growing grass and vegetation.

The operative staff/ workers shall be provided with personal respiratory gadgets to prevent them from direct inhalation of dust.

13.2.C.iii Climate Condition:

The climate of Bhiwani district can be classified as tropical steppe, semi-arid and hot which is mainly dry with very hot summer and cold winter except during monsoon season when moist air of oceanic origin penetrates into the district. There are four seasons in a year. The hot weather season starts from mid-March to last week of the June followed by the south-west monsoon which lasts up to September. The transition period from September to October forms the post-monsoon season. The



winter season starts late in November and remains up to first week of March. The normal annual rainfall of the district is 420 mm which is unevenly distributed over the area 22 days. The south west monsoon sets in from last week of June and withdraws in end of September, contributed about 85% of annual rainfall. July and August are the wet test months. Rest 15% rainfall is received during non-monsoon period in the wake of western disturbances and thunder storms. Generally rainfall in the district increases from southwest to northeast.

Normal Annual Rainfall	420 mm
Normal monsoon Rainfall	355 mm
Temperature	
Mean Maximum	41°C (May & June)
Normal Rain days	22°C

The general direction of wind in summer season is west to east and in winter it is northwest to southeast (Plate no.14)

13.2.D Socio Economic Environment

13.2.D.Demographic structure

Details of the Bhiwani District primary census Abstract has been given in table.

PRIMARY CENSUS ABSTRACT DISTRICT BHIWANI AT A GLANCE

Sr. No.	Item	Value			Rank in the Districts in Haryana
		Total	Rural	Urban	
1.	Population	1425022	1154629	270393	4
2.	No. Of households	246742	197505	49237	3
3.	Share in total population (%) (Haryana)	6.74	7.68	4.42	4
4.	Decadal growth rate (5)	22.49	19.42	37.56	14
5.	Child population age (0-6) % to total district population	15.73	16.11	14.13	7
6.	Sex ratio (female per 1000 males)	879	884	859	5
7.	Child sex ratio (0-6)	841	844	827	7



8	Urban population (%)	18.97			16
9	Literacy rate (%)	67.45	65.25	76.62	13
10	Female literacy rate (%)	53.00	49.72	66.90	13
11	Male female gap in literacy (%)	20.64	29.38	18.12	
12	Share of SC population (%) to total population in district.	90.61	19.54	19.90	10
13	Workers to total population	42.76	45.65	30.39	7
14	Main workers to total workers	69.78	67.27	85.88	16
15	SC literacy	56.26	55.59	59.05	12
16	Density of population	298	244	5256	18
17	Permanent houses (%) of total census houses.	70.53	68.1	8.67	8
18	Condition of houses good (%)	43.95	41.69	53.36	16
19	Households having no exclusive room or one room (% of total households).	19.5	18.09	25.70	5
20	Household with availability of electricity (% of total household)	83.19	18.76	93.24	12
21	Household having tap water (% of total households)	55.4	48.55	84.01	6
22	Households having bathroom with houses (%)	55.05	45.0	70.93	13
23	Household having kitchen within houses (%)	62.33	60.18	71.37	5
24	Household having television	42.19	34.26	69.94	17
25	Household having telephone (%)	6.92	3.85	19.69	18
26	Household having bank accounts (%)	44.44	44.21	45.41	11
27	Household having radio (%)	42.63	42.35	43.79	5
28	Household having car, jeep (%)	2.34	1.90	4.14	17
29	Household having scooter, motorcycle (%)	10.35	7.38	22.65	19
30	Household having bicycle (%)	34.41	27.68	62.31	19
31	Household having no drainage of Wastewater (%)	36.3	41.54	14.55	6
32	Household having no Lateran (%)	64.52	73.93	25.51	6
33	Household having none of assets (%)	33.8	38.21	15.58	18
34	Electricity available, latrine no available (%)	50.19	57.28	20.81	5
35	Electricity not available, latrine available (%)	2.48	2.59	2.05	11



Due to mining activities significant changes are expected in the daily life of the inhabitants as mining activities will open new avenues of employment generation for local people. The favorable changes are expected in the terms of more employment opportunities, better Infrastructure facilities like power linkage, medical facilities, water supply etc.

13.2.D.ii Occupational health and safety :

The people/labour who are associated with mining activities are generally exposed for pollution related diseases which on prolonged exposure to the same environment become chronic. In order to check the above, regular check up of the labour and other persons working in the same environment shall be made. Preventive measures viz. Use of respiratory masks, helmets etc. shall be adjusted to avoid the adverse impact of mining / pollution on the health of the labour.

13.2.D.iii Recreational Facilities:

After eight hours of hard work the labour/workers/operators badly need some kind of entertainment to ease them. It is therefore proposed, to organize a cultural and educative program at least once in month. Some additional programs shall be organized, especially on the family welfare and other fields to entertain them as well as to educate them. This will include program on alcohol addiction etc.

13.3 Environment Management Plan:

To check the adverse effect likely to be caused to the proposed mining on the environment and ecology of the area environmental control measures are to be followed. Based on the environmental impact assessment made the following measures shall be taken into account for the betterment of the environment and ecology.



13.3.i Temporary storage and Utilization of top soil:

The topsoil will be removed separately in advance of the mining of other overburden and will be stocked separately. The locations of the soil stack yard are shown in year wise plans. To prevent erosion of the stacked top soil the height of the stacks will be restricted to 6mtrs above ground level. The retaining wall will also be erected along the lower edges of the topsoil of stacks, as they will be prone to erosion. The width of these walls will be 0.5 mtrs. at top and 1 meter at the bottom with a height of about 6 mtrs. Further plantation of grass is proposed on the surface of the dump slopes to improve its quality and to restrict soil erosion.

13.3.ii Proposal for reclamation of land affected by mining activities during and at the end of mining lease period.

Land reclamation is the single broad environmental protection system which will provide protection and control of most of the adverse environmental impacts of mining and also have improvement of aesthetic beauty of the area which will be denuded due to mining activity. As a result of mining of this deposit the original ground profile will be lowered and deep depressions will be created. Further at some selected places the ground will be covered as waste dumps. Besides this the hydrographic system may be affected due to wash-off. Based on these conditions it is proposed to improve the effected land wherever possible for better land use, so as to support forestry and creation of water reservoir etc. Accordingly, the land reclamation portion shall be done by planting trees on the dumps along the roads surroundings the office building on the waste barren land and in the open pits when they reach their ultimate stage.



Plantation Along the roads.

In order to barricade the dust generated during the movement of the trucks and also to restrict noise level a forestation is proposed along the approach roads to pits . This will improve the aesthetic beauty of the area by a screening visual intrusion of the quarry workings. For this purpose the soil produced from the mine will be brought and spread in the layer of 2mtr. thick and 6 meters. Wide along both sides of the roads.

Surrounding the office buildings:

A vegetation barrier will be provided around the office buildings and on the waste barren land.

In open pits :

As the mineral is not going to be depleted during lease period no plantation is proposed in the mineral bearing area/ pits. Only foot hill side and barren land will be planted.

A forestation/ Green belt

The lease area is hilly terrain devoid of any vegetation. Mining activities will not cause any harm to riparian vegetation cover as the working will not extend beyond the lease area. Land outside is the private agriculture land. Link road from the crusher zone pass through the areas. It is proposed to have plantation on both sides of the roads as greenbelt to provide cover against dust dissemination. Plantation will also be carried out as social forestry programme in villages, school and the areas allocated by the Panchayat/ State authorities.

Native plants like Neem, Pipal, Khejri, Ber and other local species will be planted. A suitable combination of trees that can grow fast and also have good leaf cover shall be adopted to develop the greenbelt. It is proposed to plant 3500 no's of native species along with some fruit



bearing and medicinal trees during the plan period.

Table: Greenbelt Programme

Year	Saplings to be planted	Survival 70 %	Species	Place of Plantation
I	700	490	Neem, Peepal, Ber, Shisham, Sirish, Babool, Gulmohar	Along the roads, in barren area, surrounding office & rest shelter and other social forestry programme.
II	700	490		
III	700	490		
IV	700	490		
V	700	490		
Total	3500	2450		

The tree plantation is proposed at spacing of 3m x3 mtr. The size of the pits will be 40cm x 40 cm filled with manures. The intervening space between the trees will be covered with bush varieties. Taking a survival rate of 70%, about 700 no. of trees will be planted year wise during plan period. Fifteen hundred (1500) trees/ hectare shall be planted on yearly basis.

Post plantation care:

This will include the following measures:-

- a) Protection from grazing and fires.
- b) Watering at least once a week during dry spells.
- c) Manu ring
- d) Weeding and soil working.
- e) Mulching
- f) Replacement of casualties.
- g) Protection form pests.

The maintenance system will include:-



- a) Examination of signs of slopes failure and excess erosion.
- b) Collection of water samples.
- c) Keeping and effective track of vegetation established.
- d) Checking the quality of air near mine site by air sampling and getting it analyzed.
- e) Collection and analysis of regular soil samples from reclaimed areas to monitor the improvement in soil characteristics.

Equipment for Environmental Restoration Plan:

- i) Water tankers will be used for the sprinkling of water on the mining faces regularly .
- ii) A tractor with trolley will be used to transport the seeds, saplings, fertilizers and other agricultural tools. The same tractor will be used for water spray, work also. Other miscellaneous agricultural tools will be required for seedbed preparation, terracing of dumps, mulching, plantation and roost post plantation care.

Manpower and Organization:

Regular man power will be required to be deployed for supervision, sample collection, assistance in reclamation works, monitoring system of post plantation care. For carrying out the actual work of a forestation, sapling plantation, mulching, construction of drains and tanks and other maintenance work, casual labor will be deployed as and when necessary.

13.3.iii

Program of Afforestation

The afforestation will be done proposed earlier. Plant saplings will be obtained from private/ Govt. nurseries. During the forestation work the combination of different type of species will be done on the area ear marked for plantation in green belt & in the surrounding areas.



The area is demarcated on the plan plat No 5-9. The tree plantation will be made all along the mine approach roads surrounding the site services. This will cover about 3.40 ha land. About 700 trees per year will be planted on the above area. The annual area covered will be 0.70 hectares. The survival rate is expected 70% therefore the saplings / plants which dies will be replace in addition to the plants proposed above.

13.3.iv Stabilization and Vegetation of Dumps:-

The same is already described in chapter 7 at para no. 7.3

13.3.v Treatment and Disposal of water from Mine:-

There is no regular disposal of water form mines except during rainy season. The water pumped out from the mines during rainy season shall be disposed through water garland ditches where settlement tanks are provided at regular interval to settle down the UN-dissolved matter/ sediments before finally depositing of the purposed out water through the natural nallah which is situated within the lease hold area.

Since the rainy water and the ground water do not contain any toxic material, this does not need any chemical treatment before disposal.

13.3.vi Measure for minimizing adverse effects on water regime:

It is proposed to make necessary arrangements for developing rainwater harvesting of the mine water during rainy season. It is proposed to develop necessary bores and pits for this purpose. This will help in recharging th ground water at a faster rate.



13.3.vii Socio Economic benefits arising out of mining: -

The socio economic benefits in the form of labour employment for mining transportation and other ancillary activities pertaining to mining shall benefit the local people also in the activities like milk supply and sharpening of tools, maintenance of tools etc. will also better the socio-economic status of the local inhabitants.

13.4 MEASURES TAKEN AND TO BE TAKEN FOR THE CONTROL OF WATER, NOISE AND AIR POLLUTION

Air Pollution:

Emission of gases and dust takes place due to movement of vehicles. Spraying of water and plantation along the road side prevents the spread of dust. Plantation also acts as barrier for restricting pollution. Impact on air environment has been assessed taking in to consideration the proposed production and increase emissions. The sources of air pollution are given below:

- Operation of mining machinery/ loading operations
- Transportation of mineral
- Wind erosion from barren area and nearby area

Air pollutants released during production can be checked by:

- Dust suppression system/ water spraying would be adopted at mine working and loading points
- Excavation operations to be suspended during very strong wind conditions
- Afforestation will be carried out for control of dust
- Plantation with wide canopy trees along approach road will help in dust suppression
- Persons to be provided with dust mask and other personal protective equipments, particularly during summer months and dust storm periods



Transportation

- Regular water spraying on haulage roads during mineral transportation by water sprinklers,
- Avoid over loading of tippers & consequent spillage on the roads,
- Mineral carrying trucks will be effectively covered by tarpaulin to avoid escape of fines to atmosphere,
- Air quality shall be regularly monitored both in the core zone and the buffer zone.

Controlling of NOx level

The source of NOx is due to vehicular emission. This can be controlled by proper maintenance and servicing of vehicles. Only P.U.C. certificated vehicles will be permitted

Noise Pollution

There is drilling and blasting for mineral extraction. Noise pollution due to drilling, blasting & transportation will cause some problem to the inhabitants of this area because there is human settlement in close proximity to the link roads in lease area. Effective steps will be taken to keep the noise level well below the DGMS prescribed limit of 85 dBA.

Noise control is achieved by the following:

- Proper care and maintenance of the equipment will be carried out.
- Personal protective equipment will be provided to the workers.

13.5 DETAILS OF HEALTH CHECKUP AND INSURANCE OF ALL THE EMPLOYED PERSONS (FOR EXISTING LEASE)

All workers will be subjected to medical examination as per Mines Rule 1955 both at times of appointment and at least once in five years. Medical camps will be organized for this activity. Insurance of all employees as per the rules will be carried out.

13.6 Corporate Social Responsibility



As a corporate responsibility following measures along with budget provision is proposed for improving the conditions of persons in and around the project area:

Sr. No.	Description	Amount (in lacs)
1	Health check up camps	3.0
2	Surveillance programme of the workers	2.0
3	Insurance cover of workers	5.0
4	Assistance to local schools, scholarship to students	2.5
5	Sanitations and drinking water facilities	5.0
6	Vocational training to persons for income generation	2.5
7	Assistance to self help groups	5.0
Total		25.00

13.7 Fund Provision for Environmental Management

It is proposed to create an Environment Management Fund. The contractor shall deposit/pay an amount equal to 10% of the due contract money along with instalments towards the 'Mines and Minerals Development, Restoration and Rehabilitation fund.

13.8 Fund Provision for EMP Measures

Following provisions are proposed to be taken for improving, control and monitoring of environment protection measures

Sr. No.	Particulars	Amount (in lacs)
1	Pollution monitoring – Air, Water, Noise	4.0
2	Pollution abatement – Water sprinkling	3.0
3	Wire fencing at plantation sites	1.0
4	Plantation including maintenance	1.0
5	Rainwater harvesting	2.0
6	Haul road and other roads repair and maintenance	2.5
Total		13.5

The protection measures will be dynamic and subject to periodic review so that measures remain effective and appropriate.



PART –II

PROGRESSIVE MINE CLOSURE PLAN

1.0 Introduction:-

Vide notification GSR 330(E) date 10-04-2003, MCDR, 1988 has been amended incorporating preparation of Mine Closure Plan. Corresponding amendments has been made in MCDR, 1960. Accordingly Haryana Government has also amended the mineral concession rules which requires the Mine Closure Plan (Progressive & Final) as per chapter 10 of the "Haryana Minor Mineral Concession, Stocking, Transportation of Minerals and Prevention of Illegal Mining Rules, 2012" In the present case as it is a new mine a progressive mine closure plan, as a component of the mining plan is required. The present position of the deposit does not permit to close any part of the pits. At the proposed pace of work in the next coming 10 years it will not be possible to close down any part except doing protective works like fencing and making of a drain, plantation etc.

(A) NAME & ADDRESS OF THE LESSEE

M/s MSK (JV),S-571, Greater Kallash Part-II, New Delhi 110048

(B) LOCATION OF THE LEASE AREA

District Bhiwani
State Haryana
Taluka Dadri
Village AtelaKalan

(C) EXTENT OF THE LEASE AREA

Village	Khasra no.	Area in hect.	Ownership
AtelaKalan	103,104 min,105,106,107 min	54hectares	Gram Panchayat



(D) PRESENT LAND USE PATTERN

Details are as below :

S. No.	Land Use Category	Present
1.	Waste Dump (Soil)	-
2.	Reclamation (Water body)	7.70
	Total Excavated Area	-
3.	Road	1.68
4.	Infrastructure (Administrative building crusher etc.)	0.16
5.	Town Ship Area	-
6.	Afforestation & Green belt (Including plantation on Dump area, Road side, along the pits/dead benches)	-
7.	Mineral / Sub-grade mineral Storage	-
8.	Undisturbed area	44.46
	Total	54.00

(E) METHOD OF MINING:

(Details are given in Chapter 4 of the main Mining plan)

The present mining operations are designed to be carried out by open cast mining means. The entire mining operation proposed are mechanized A part of mining, the loading and transportation up to stack yard shall be done mechanically. It is proposed to load in the trucks/dumpers directly to the destinations and mineral is not put up in this stack yard to avoid the double handling. In the present operation the bench height shall be 9mtrs. Each bench will advance one by one. While carrying out the mining operations in accordance with the above provision the overall pit slope shall be maintained the 70° the mineral bearing rocks being hard and compact.

(F) MINERAL PROCESSING OPERATION:

No mineral processing is envisaged for stone (minor mineral) produced during the mining activity.



1.1 Reasons for closure:

The progressive mine closure plan has been prepared in compliance of Rule 70 (1) of Haryana Minor Mineral Concession Rules 2012 under MMCR 1986. Which is reproduced as under.

Rule 70.(1) Every mineral concession holder shall prepare a Mining Plan along with the Mine Closure Plan (Progressive & Final) and shall not commence mining operations in any area except in accordance with such Mining Plan duly approved by an officer authorized by the Director in this behalf.

As the mineral is not going to be depleted during the plan period no immediate closure is planned as sufficient reserves are available to carry on the activities. There is market potential in domestic demands.

1.2 Statutory Obligations:

The lessee is bound to submit the Progressive mine closure plan either with Mining plan or Scheme of Mining Lessee is bound to follow the terms and conditions as will be stipulated in the lease deed /LOI.

In addition to it the rules pertaining to the Protection of Environment i.e. Environment Act Environment Rules and other associated rules for the protection of environment will have to be followed. During the course of mining the rules stipulated in Mines Act, Mines rules Metalliferous Mines Regulation 1961 and RMMCR.1986 will be followed. All other rules pertaining to the mining existing at that time will be followed during the course of mining activities.

1.3 Closure plan preparations

Name, address and registration number of the recognized persons who prepared the progressive closure plan and name and address of the executing agency who is involved in the preparation of progressive mine closure plan.

S.N.Sharma
RQP/DDN/135/2001-A (Annexure-III)



Lessee will himself implement the closure plan; no outside agency will be involved.



2.0 MINE DESCRIPTION

2.1 General Geology and Local Geology

2.1.1 Regional Geology

(Details are given in the Chapter 3 of main mining plan)

2.1.2 Local Geology

(Details are given in the Chapter 3 of main mining plan)

2.2 Reserves

(Details are given in the Chapter 3 of main mining plan)

2.3 Mining Method:

Mining method to be followed is described in Chapter 4 of mining plan

2.4 Mineral Beneficiation

No mineral beneficiation is envisaged. But it is proposed to install a crusher in the lease hold area for crushing boulders.



3 Review of implementation of mining plan including five years progressive closure plan upto the final closure plan

Mining Plan and Progressive mine closure plan are being submitted for the first time. It will be reviewed after five years and review of implementation will be given with next mining scheme.



4.0 CLOSURE PLAN

4.1 Mined - out land

At the end of mining plan period that is at the end of 5 years about 26.30 hectares of area will be mined out. Landuse at various stages is given in the table below:

Table Land Use at the end of plan period Land use pattern Atela Kalan Stone Mine – Present, After 5 years & End of Life of Mine

S. No.	Land Use Category	Present	At the end of 5 th Year	At the end of Life of Mine
1	Waste Dump (Soil)	-	2.20	-
2	Reclamation (Water body)	7.70	26.30	27.56
	Total Excavated Area	-	28.50	27.56
3	Road	1.68	2.08	2.08
4	Infrastructure (Administrative building crusher etc.)	0.16	0.18	0.18
5	Town Ship Area	-	-	-
6	Afforestation & Green belt (Including plantation on Dump area, Road side, along the pits/dead benches)	-	3.40	18.91
7	Mineral / Sub-grade mineral Storage	-	-	-
8	Undisturbed area	44.46	19.84	5.27
	Total	54.00	54.00	54.00

4.2 Water quality management

There are no water courses in the area except dry nallahs. The precipitated water also flows along the depressions formed in between the outcrop of country rocks. The water table in the area is about 45-505mtrs. Below the ground surface. There is no flow of water in the lease in post monsoon period. Area is having 420 mm rainfall in a year. During rainy season, water will be accumulated the pit which will be rained out and finally it will be sent in to



natural drain. A settling tank will be provided so that the finer sediments are settled down. These finer sediments will be collected after rain is over. There will be no intersection of water table as working will be carried above the valley level while the water level is 45-50 m below the general surface of area. Some wells are located in the agriculture fields where water table was recorded 45-50m.

4.3 Air Quality Management:

The proposed mining method is not likely to produce much of dust and fugitive emissions to cause damage to ambient air quality of the area. Workers will be provided with personnel protective equipment like facemask, ear plug/ muffs.

For air pollution management at the progressive mine closure of mine, greenbelt will be developed to prevent and control air pollution.

4.4 Waste Management:

As stated in mining method, there will be no OB/ waste generation and there will not be any OB/ waste dumps.

4.5 Top Soil Management

There is a very thin soil/ top soil which will be scraped and used for plantation.

4.6 Tailing dam management

There is no proposal of beneficiation of mineral. No tailing dam is envisaged.

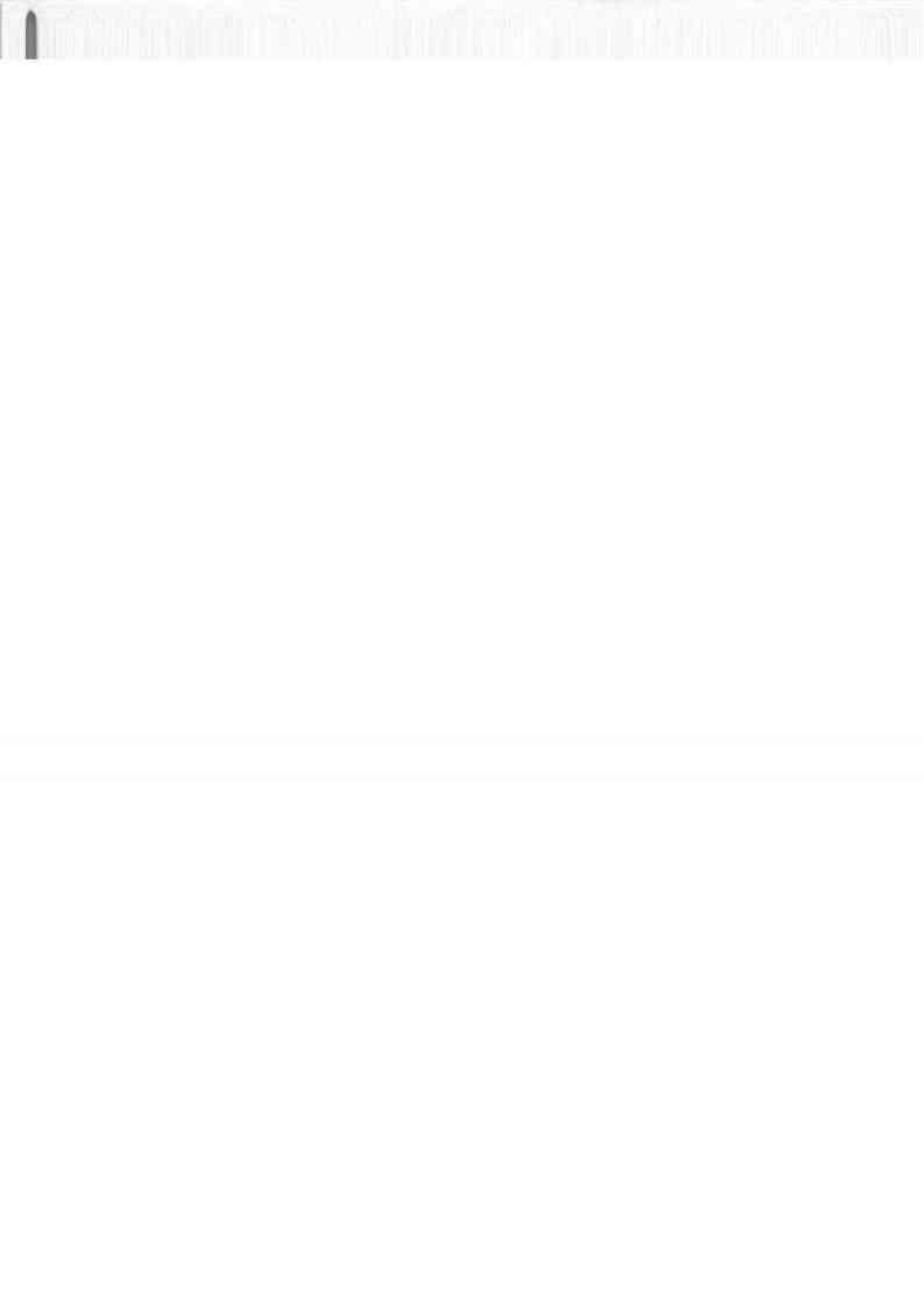
4.7 Infrastructure:

The infrastructure facilities like site office, first-aid station, rest shelter/ store, drinking water etc. will be established.

4.8 Disposal of mining machinery:

There will be deployment of heavy earth moving machines for operation of mine. Crusher will also be installed for in-house crushing of boulders. As this is a Progressive Mine Closure Plan for the next 5 years and therefore we do not envisage the disposal of mining and crushing machineries. But at the end of lease period, it is proposed to decommission the crushers.





4.9 Safety & Security:

Safety measures will be implemented to prevent access to excavation area by un-authorized persons as per Mine Act 1952, MMR 1961.

- i. Safety measures will be implemented as per Mine Act 1952, MMR 1961, Mines Rules 1955.
- ii. Provisions of MMR 1961 shall be followed strictly and all roads shall be 10 m wide and have a gradient of not more than 1 in 20.
- iii. The bench height will be 9.0m.
- iv. Width of bench will be kept around 20.0 m for ease of operations and provide sufficient room for the movement of equipments.
- v. Protective equipment like dust masks, earplugs/ muffs and other equipments shall be provided for use by the work persons.
- vi. Notices giving warning to prevent inadvertent entry of persons shall be displayed at all conspicuous places and in particular near mine entries.
- vii. Danger signs shall be displayed near the excavations.
- viii. Security guards will be posted.
- ix. In the event of temporary closer, approaches will be fenced off and notice displayed.

4.10 Disaster Management and Risk Assessment:

This should deal with action plan for high risk accidents like landslides, subsidence, flood, inundation in underground mines, fire, seismic activities, tailing dam failures etc. and emergency plan proposed for quick evacuation, ameliorative measures to be taken etc. The capability of lessee to meet such eventualities and the assistance to be required from the local authorities should be described.

- The mechanized mining activities in the hilly area will involve any high risk accident due to side falls/collapse, flying stones due to blasting etc.



- The complete mining operation will be carried out under the Management and control of experienced and qualified Mines Manager having Certificate of Competency to manage the mines granted by DGMS.
 - All the provisions of Mines Act 1952, MMR 1961 and Mines Rules 1955, RMMCR 1986 and other laws applicable to mine will strictly be complied with.
 - During heavy rainfall the mining activities will be suspended
 - All persons in supervisory capacity will be provided with proper communication facilities.
- Competent persons will be provided FIRST AID kits which they will always carry.

4.11 Care and Maintenance during Temporary Discontinuance:

In case of any temporary discontinuance due to court order or due to statutory requirement or any other unforeseen circumstance following measures shall be taken for care, maintenance and monitoring of conditions.

- Notice of temporary discontinuance of work in mine shall be given to the DGMS as per the MMR 1961.
- All the mining machinery shall be shifted to a safe place.
- Entrance to the mine or part of the mine, to be discontinued shall be fenced off. Fencing shall be as per the circular 11/1959 from DGMS.
- Security Guards shall be posted for the safety and to prevent any unauthorized entry to the area.
- Carry out regular maintenance of the facilities/area detailed below in such a way as would have been done as if the mines were operation:
 - Mine roads and approach roads,
 - Fencing on approach roads,
 - Checking and maintenance of machines and equipment,
 - Drinking water arrangements,
 - Mine office, first aid stations etc.
- Competent persons shall inspect the area regularly.



- Air, water and other environmental monitoring shall be carried out as per CPCB and IBM Guideline.
- Care and upkeep of plantation shall be carried out on regular basis.
- Status of the working and status monitoring for re-opening of the mines shall be discussed daily.

In case of discontinuance due to any natural calamities/abnormal conditions, mining operation will be restarted as early as possible after completing rescue work, restoring safety and security, repairs of roads etc.



5.0 ECONOMIC REPERCUSSION OF CLOSURE OF MINE AND MANPOWER RETRENCHMENTS

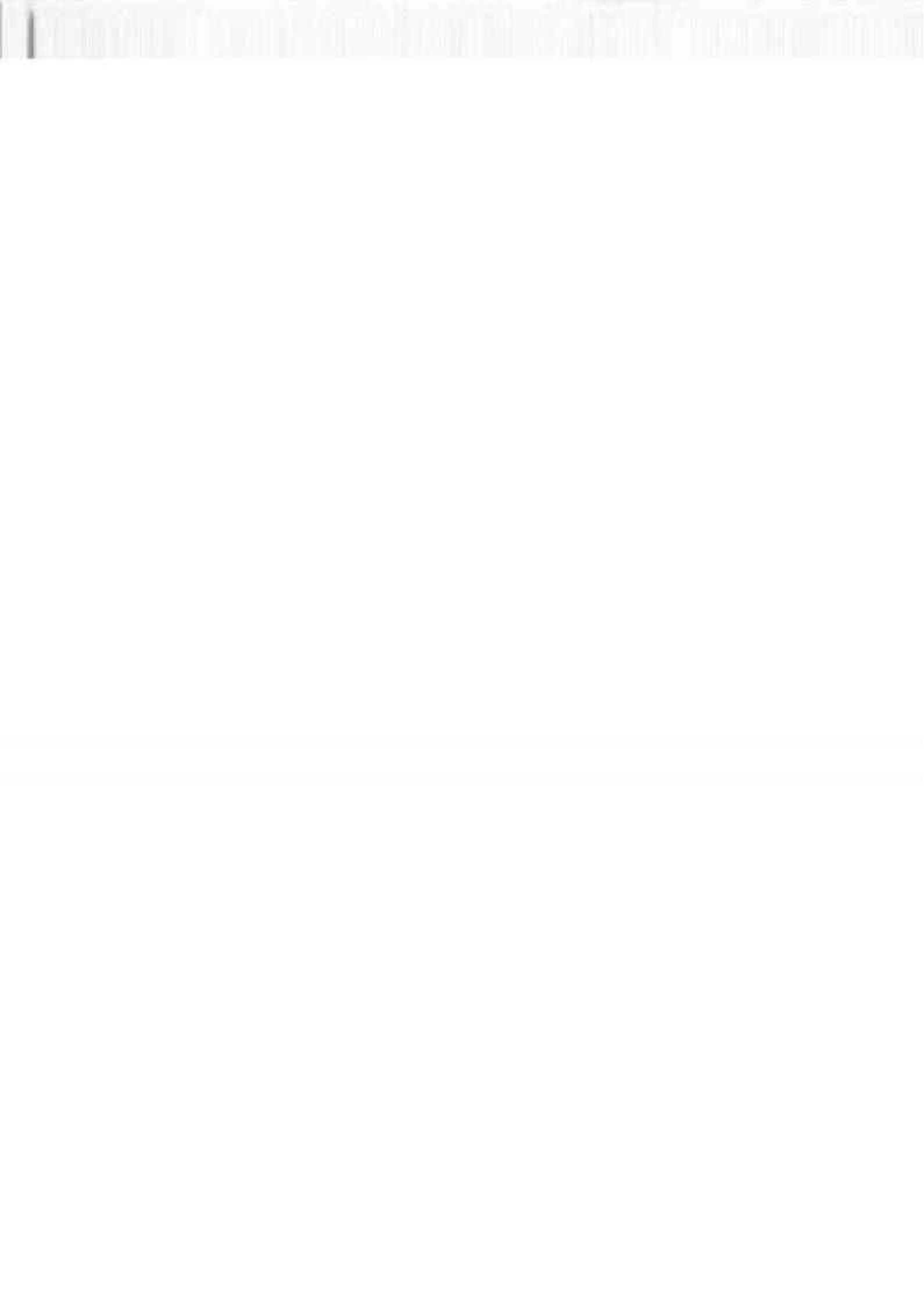
Lease area will be granted for a period of 12 years only. As per the production programme envisaged, at the end of lease period, still sufficient reserves would be left available for continuing production activities further. Hence, no closure is planned. There will be no affect on the man power as the persons belong to nearby villages and will have an option either to be available for employment for the next contract/ lease or do the agriculture in their fields.



6.0 TIME SCHEDULING FOR ABANDONMENT

The lease area has enormous potential for continuance of operations even after the expiry of the awarded period. The details of time schedule of all abandonment will be given at the time of final closer plan





7.0 ABANDONMENT COST

As at present mining is not going to be closed so abandonment cost could not be assessed. However based on the progressive mine closure activities during the plan period, cost is assessed as given below:

Table 16: Abandonment Cost

ACTIVITY	YEAR					Rate	Amount (inRs.)	
	First	Second	Third	Fourth	Fifth			
Plantation (in no.)	700	700	700	700	700	@100Rs per sapling	3,50,000	
Plantation cost	70,000	70,000	70,000	70,000	70,000	Including maintenance		
Wire fencing (meter)	60,000	60,000	60,000	60,000	60,000	@ of 120Rs per meter	3,00,000	
Toe walls (m)770m	7,70,000	-	-	-	-	@ Rs 1000/m	7,70,000	
Drain(m) 770m	7,70,000	-	-	-	-	@ Rs 1000/m	7,70,000	
	Total							21,90,000



8.0 FINANCIAL ASSURANCE

Total 26.38 ha area will be put in use up to the end of the plan period. Details of area put in use as given below (As per circular No.4/2006 issued by CCOM, Nagpur following table has been considered for calculation for financial assurance).

Table 17: Calculation for Financial Assurance

S. No.	Item	Area put on use at start of plan (Ha) (A)	Requirement at the end of plan period (Ha)	Total area put to use (Ha) (B)	Area considered as fully reclaimed & rehabilitation (Ha) (C)	Net area considered for calculation (Ha) D = (B-C)
1.	Area to be excavated	7.70	26.38	26.38	0.00	26.38
2.	Storage for topsoil	0.0	0.80	0.80	0.0	0.80
3.	Overburden/ dumps	0.0	0.0	0.0	0.0	0.00
4.	Mineral storage	0.0	1.20	1.20	0.0	1.20
5.	Infrastructure (Workshop, Adm. Building & Road)	0.16	0.18	0.18	0.18	0.18
6.	Green belt	0.0	3.40	3.40	3.40	0.0
7.	Tailing pond	0.0	0.0	0.0	0.0	0.0
8.	Effluent treatment plan	0.0	0.0	0.0	0.0	0.0
9.	Mineral separation plant	0.0	0.0	0.0	0.0	0.0
10.	Township area	0.0	0.0	0.0	0.0	0.0
11.	Others to specify	0.0	0.0	0.0	0.0	0.0
Total		7.86	31.96	31.96	3.58	28.56

Total 28.56ha area is considered for calculation. The total financial assurance (@15000/- per ha. will be of Rs 4, 28,400/-. This will be given by lessee as per rule no 70 (1) (6) amended in 2012 as surety bond / bank guarantee.



9.0 CERTIFICATE

It is enclosed with the report.



10.0 PLAN AND SECTION

Plan and section are prepared and enclosed with the mining plan.

S. N. SHARMA
RECOGNISED QUALIFIED PERSON (RQP)
INDIAN BUREAU OF MINES (IBM)
RQP No. RQP/DDN/135/2001/A
VALID UPTO : 29th MARCH 2021



Registered

From:

The Director,
Department of Mines & Geology,
Haryana.

To:

M/s MSK (JV),
S-571, Greater Kailash,
Part-II, New Delhi - 110 048.

Memo No. DMG/HY/ML/Atela Kalan/2013/155
Dated Chandigarh, the 03.01.2014

Subject: Acceptance of the highest bid in respect of minor mineral mines of "Stone alongwith Associated minor minerals" of "Atela Kalan" over an area of 54.00 hectares in the Tehsil Dadri district Bhiwani offered in the auction held on 30.12.2013 and issuance of Letter of Intent (LoI) regarding.

You offered the highest bid of Rs. 16,07,00,000/- [Rs. Sixteen Crores seven lacs only] per annum, against the Reserve Price of Rs. 11,77,00,000/- per annum, for obtaining the Mining lease of Minor Mineral Mines namely "Atela Kalan" over an area of 54.00 hectares falling in Khasra numbers 103,104min,105,106,107min of Villages "Atela Kalan" in Tehsil Dadri, District Bhiwani, in the auction held on 30.12.2013 in the office of the Mining Officer, Bhiwani for the grant of mining leases of minor mineral mines of stone alongwith associated minor minerals of the districts of Bhiwani.

2. You are hereby informed that the state government has accepted the highest bid of Rs. 16,07,00,000/- [Rs. Sixteen Crores seven lacs only] per annum, offered by you in respect of the above said minor mineral mines/quarries of "Atela Kalan" under the provisions of the Haryana Minor Mineral Concession, Stocking, Transportation of Minerals & Prevention of Illegal Mining Rules-2012 (State Rules). Accordingly, you have become the successful bidder in respect of "Atela Kalan" quarries of the district, Bhiwani.

3. The State Government having accepted the aforementioned highest bid offered by you, the Department is pleased to issue this Letter of Intent (LoI) for grant of mining lease in your favour in respect of the Mines/area namely "Atela Kalan" of stone along with associated minor minerals subject to the following terms and conditions:-

- (i) The period of lease shall be 12 years and the same shall commence with effect from the date of grant of environmental clearance by competent authority or etc.



expiry of a period of 12 months from the date of this communication of acceptance of highest bid/ issuance of "Letter of Intent", whichever is earlier;

- (ii) Though due care had been taken in specifying the details of the area of the mining sites, however, in case of any inadvertent mistake, the same shall be got rectified/corrected before execution of the lease deed/agreement;
- (iii) The amount of the highest bid i.e. Rs. 16,07,00,000/- [Rs. Sixteen Crores seven lacs only] per annum shall be the "Annual dead rent" payable by you in the manner prescribed in the lease deed/agreement to be executed on form ML-1 appended to the State Rules.
- (iv) The above said annual dead rent shall be increased @ 25% on completion of each block of three years. Accordingly, the year wise amount of the annual lease money shall be as per details given below:

Sr. No.	Year of the Contract Period	Annual contract Money
1	First Year	Rs. 16,07,00,000
2	Second Year	Rs. 16,07,00,000
3	Third Year	Rs. 16,07,00,000
4	Forth Year	Rs. 20,08,75,000
5	Fifth Year	Rs. 20,08,75,000
6	Sixth Year	Rs. 20,08,75,000
7	Seventh Year	Rs. 25,10,93,750
8	Eighth Year	Rs. 25,10,93,750
9	Ninth Year	Rs. 25,10,93,750
10	Tenth Year	Rs. 31,38,67,188
11	Eleventh Year	Rs. 31,38,67,188
12	Twelfth Year	Rs. 31,38,67,188

- (v) As per the terms and conditions of the grant, you are liable to deposit Rs. 4,01,75,000/- i.e. equal to 25% of the annual bid amount as "security deposit" and Rs. 1,33,91,667/- on account of one months advance dead rent out of which you have already deposited an amount of Rs. 1,60,70,000/- i.e. equal to 10% of the annual bid amount as 'initial bid security' at the fall of hammer. The balance amount of Rs. 2,41,05,000/- of the bid security i.e. 15% of the annual bid amount along with Rs. 1,33,91,667/- on account of one month's advance dead rent shall be deposited before commencement of the mining operations or before expiry of the period of 12 months, whichever is earlier;
- (vi) You shall have to execute lease deed in Form ML-1 appended to the State Rules within a period of 90 days from the date of issuance of this communication/ grant of Lol. The stamp as applicable at the time of execution/registration of the agreement shall be payable by you.
- (vii) Four copies of draft lease deed/agreement shall be submitted, of which the first copy shall be submitted on stamp paper of Rs. 1,38,98,040/- (Rs. One crore thirty



eight lakhs ninety eight thousand forty only. This amount is subject to audit and in case of any difference found at a later stage, the difference shall be payable by you on demand;

- (viii) The lease deed would also be required to be got registered on payment of the applicable Registration fee;
- (ix) In case you fail to execute the Lease Deed within the prescribed period of 90 days, this Lol shall be deemed to have been revoked and the amount of initial bid security deposited at the time of auction shall be forfeited. Further, the balance amount of 15% towards the bid security, amounting to Rs. 2,41,05,000/- being the 15% of the annual bid amount, shall be recovered as arrears of land revenue and, you, as the Lol holder/defaulters, shall be debarred from participation in any future auctions for a period of 5 years;
- (x) You shall also furnish a solvent surety for a sum equal to the amount of the annual bid for execution of the lease deed/agreement. In case the surety procured by the lessee during the subsistence of the lease is not found solvent, the lessee shall offer another solvent surety and a supplementary deed shall be executed to this effect;
- (xi) You shall be liable to deposit the Dead Rent in advance at monthly intervals as per provisions of lease deed/agreement i.e. from the date of commencement of the lease deed;
- (xii) You shall be liable to pay dead rent as determined through open auction or shall pay royalty in respect of each of the minor minerals extracted or removed or consumed by you or by your agent, manager, employee etc., whichever is more. The royalty shall be payable at the rates prescribed in the First Schedule appended to the State Rules and as may be revised by the State Government from time to time.
- (xiii) You shall also deposit/pay an additional amount equal to 10% of the due Dead Rent/Royalty, whichever is more, along with the monthly installments towards the 'Mines and Minerals Development, Restoration and Rehabilitation Fund'.
- (xiv) You shall also be liable to pay advance income tax as per provisions of Section 206(c) of income tax act in addition to contract money, payable as per terms and conditions of contract agreement.
- (xv) On enhancement of the annual dead rent with the expiry of every three years period, you shall deposit the balance amount of security so as to upscale the security amount equal to 25% of the revised annual dead rent as applicable for one year with respect to the next block of three years. No interest, whatsoever.



shall be payable on the security amount deposited under the prescribed security head of the government.

- (xvi) You shall prepare a Mining Plan along with the Mine Closure Plan (Progressive & Final) as per chapter 10 of the State Rules for the "Mining site" and shall not commence mining operations in any area except in accordance with such Mining Plan duly approved by an officer authorised by the Director, Mines & Geology, in this behalf.
- (xvii) Further, the actual mining will be allowed to be commenced only after prior Environmental Clearance is obtained by you as the Lot holder/mining contractor for the Minor Mineral Stone Mines/Quarries from the Competent Authority as required under EIA notification dated 14/9/2006, as amended from time to time by the MoEF, GoI and guidelines/ circulars issued in this behalf.
- (xviii) The Mining contractor to whom the mining rights have been granted through this lease would also be liable to pay the following to the landowners for undertaking mining operation:
- (a) Annual rent in respect of the land area blocked under the concession but not being operated, and
 - (b) Rent plus compensation in respect of the area used for actual mining operations.
- (xix) The amount of annual rent and the compensation shall be settled mutually between the landowner and the lessee. In case of non-settlement of the rent and compensation, the same shall be decided by the District Collector concerned in accordance with the provisions contained in Chapter 9 of the "Haryana Minor Mineral Concession, Stocking, and Transportation of Minerals and Prevention of Illegal Mining Rules, 2012".
- (xx) The total mineral excavated and stacked by the lease holder within the area granted on mining contract shall not exceed two times of the average monthly production as per approved Mining Plan at any point of time.
- (xxi) The lessee shall not stock any mineral outside the concession area granted on mining lease, without obtaining a valid licence as per provisions contained in Chapter 14 of the State Rules.
- (xxii) The lessee shall not carry out any mining operations in any reserved/ protected forest or any area prohibited by any law in force in India, or prohibited by any authority without obtaining prior permission in writing from such authority or officer authorized in this behalf. In case of refusal of permission by such



authority or officer authorized in this behalf, lessee(s) shall not be entitled to claim any relief in payment of contract money on this account;

- (xxiii) A safety margin of two meters (2m) shall be maintained above the ground water table while undertaking mining and no mining operations shall be permissible below this level unless a specific permission is obtained from the competent authority in this behalf
- (xxiv) The lessee shall be under obligation to make available up to 75% of the produced raw material/stone to the downstream industries i.e. stone crushers operating in the area. However, in case lessee is unable to find market for his raw mineral to the extent of 75% of production, he would be required to obtain prior permission of the department to consume raw mineral in excess of 25% of his production but not exceeding 50% of his production for grounds to be recorded in writing;
- (xxv) No transfer in lease shall be permissible for a period of first five years of grant of lease. However, on submission of an application, in accordance with the provisions of the Haryana Minor Mineral Concession, Stocking, Transportation of Mineral & Prevention of Illegal Mining Rule, 2012, and after satisfying itself the state government may allow inducting of other partners/share holders to the extent of forty nine percent of the total shareholding of the original leaseholder;
- (xxvi) The lessee shall be under obligation to carry out mining in accordance with all other provisions as applicable under the Mines Act, 1952, Mines and Minerals (Development and Regulation) Act, 1957, Indian Explosives Act, 1884, Forest (Conservation) Act, 1980 and Environment (Protection) Act, 1986 and the rules made thereunder, Wild Life (Protection) Act, 1972, Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981;

4. Accordingly, you are advised to submit the Draft Mining Lease deed/agreement on Form ML-1 (in Four copies) appended to the Haryana Minor Mineral Concession, Stocking, Transportation of Minerals & Prevention of Illegal Mining Rules-2012, first copy of which shall be on the stamp paper of Rs. 1,38,98,040/- (Rs. One crore thirty eight lakhs ninety eight thousand forty only), along with other requisite documents including a solvent surety(s) for a sum equal to the amount of the annual bid for execution of the agreement, within a period of 90 days from the date of issue of this bid acceptance letter and the Lol.

5. Please note that one Sh. Rajbir Singh had filed a CWP bearing No. 27700 of 2013 before the Hon'ble Punjab & Haryana High Court challenging the conditions of the auction notice and the rules relating to payment of Rent and Compensation to the land owners and the time of 12 months allowed to the highest bidders/Lol holders for



obtaining the Environmental Clearance as per EIA notification of the Ministry of Environment & Forests, Government of India. While the Hon'ble High Court did not restrain the auction proceedings and held that the auctions may be held but it has also directed vide its orders dated 17.12.2013 that the same shall be subject to final outcome of the above said CWP. Accordingly, this acceptance/Lof is being issued subject to the outcome in CWP No. 27700 of 2013 pending before Hon'ble Punjab & Haryana High Court.

State Mining Engineer,
for Director Mines & Geology, Haryana.

Enclt.No. DMG/HY/ML/Atela Kalan/2013/156

Dated: 03.01.2014

A copy is forwarded to the following for information and necessary action:-

1. The Chairman Haryana State Pollution Control Board, Sector-6, Panchkula
2. The Deputy Commissioner, Bhiwani.
3. The Mining Officer, Bhiwani.

State Mining Engineer,
for Director Mines & Geology, Haryana.



MSK (JV)

S-571 GREATER KAILASH II, NEW DELHI 110048

TEL: 011-29220374/75 FAX: 011-29220377

Declaration

The Mining Plan and Progressive Mine Closure Plan complies all statutory Rules, Regulations, orders made by the Central or State Government, statutory organizations, court etc. have been taken into consideration and wherever any specific permission is required the lessee will approach the concerned authorities. It is also undertook that all the measures proposed in the Progressive Mine Closure Plan will be implemented in a time bound manner as proposed in the Mining Plan.




Applicant

ANNEXURE 2



सर्वोच्च न्यायालय द्वारा
 राज्य सरकार को सार में
 मान्यता का प्रमाणपत्र

INDIAN BUREAU OF MINES

(खनिज रियायत नियमावली 1960 के नियम 22(सी) के अंतर्गत)

श्री एस. एन. शर्मा

पत्न श्री के. सी. शर्मा

निवासी हाउस नं. 2181, सेक्टर - 16, फरीदाबाद, हरियाणा

द्वारा अपनी योग्यताओं और अनुभव का उत्तुष्ट प्रमाण प्रस्तुत करके के फसलवली
 खनिज रियायत नियमावली, 1960 के नियम 22(सी) के अंतर्गत उन्हें एतद्वारा खनन
 योजना तैयार करने हेतु योग्य व्यक्ति के रूप में मान्यता प्रदान की जाती है।

उनका पंजीयन क्रमांक

RAP/DDN/135/2001/A

है।

या मान्यता दिनांक 29.03.2011

की प्रमदल

होने वाली ~~दस्तावेज~~ की अवधि के लिए वैध है।

स्थान : देहरादून

दिनांक : 30.03.2011

[Signature]

क्षेत्रीय खान नियंत्रक
 भारतीय खान ब्यूरो
 Regional Controller of Mines
 भारतीय खान ब्यूरो
 Indian Bureau of Mines



CONSENT LETTER FROM APPLICANT

The Mining Plan and Progressive Mine Closure Plan in respect of minor mineral mines of "Stone along with Associated minor minerals" of AtelaKalan over an area of 54 hectares, Tehsil - Dadri, District - Bhiwani (Haryana) of M/s MSK(JV), S-571, GK-II, New Delhi is being prepared by S.N. Sharma (Recognized Qualified Person).

I request The Director Mines and Geology, Haryana to make further correspondence regarding modification of the mining plan with the said RQP on the following address:-

S.N. Sharma (RQP/DDN/0135/2001-A)
282, FF, Sector-11D, Faridabad-121006

Also send copies of all correspondence at our head office on the following address:-

MSK - 'JV'
S-571, Greater Kailash-II, New Delhi-110048

I also authorize Shri S.N. Sharma to make correspondence with your office.

I hereby undertake that the Mining Plan in respect of this area prepared by RQP be deemed to have been made with my knowledge and consent and shall be acceptable to me and binding on me in all respects.

This is to declare that the Mining Plan & Progressive Mine Closure Plan complies all statutory Rules, Regulations, orders made by the Central or State Government, statutory organizations, court etc. have been taken into consideration and wherever any specific permission is required the lessee will approach the concerned authorities. It is also undertaken that all the measures proposed in the Progressive Mine Closure Plan will be implemented in a time bound manner as proposed.

Place: New Delhi

Date: 15.01.2014



For MSK - 'JV'


Lead Partner