

M/S BHAGWATI STONE CRUSHER
PARTNER – SUREKHA DEVI & BIPIN PATEL
MAUZA- KHAKHANDUWA, P.S- GOVINDPUR,
DISTRICT- NAWADA, BIHAR

PRE FEASIBILITY REPORT

PRE-FEASIBILITY REPORT

KHAKHANDUA STONE DEPOSIT, BLOCK -B

PARTNER – SUREKHA DEVI & BIPIN PATEL

VILLAGE/MOUZA	:	KHAKHANDUWA	
THANA NO.-	:	309	
P.S	:	GOVINDPUR	
DISTRICT	:	NAWADA	
STATE	:	BIHAR	
KHATA NO. AND PLOT NO.	:	KHATA NO.	PLOT NO.
		85	1(P)
APPLIED AREA	:	16.0 ACRES / 6.475 HA.	
LEASE PERIOD (AS PER L.O.I.)	:	5 YEARS	
PRODUCTION PER ANNUM	:	1034482.75 Cum Per Annum or 3000000 MT/Annum	
PRODUCTION PER DAY	:	3448.27 Cum Per Day or 10000 Ton Per Day	
METHOD	:	OPEN CAST OTHER THAN FULLY MECHANIZED METHOD (OFTM), CONTROL DRILLING & BLASTING	
TYPES OF LAND	:	NON- FOREST GOVT. WASTE LAND	

NAME OF PROJECT PROPONENT

M/S BHAGWATI STONE CRUSHER

PARTNER – SUREKHA DEVI & BIPIN PATEL

NEAR SANTOSHI TEMPLE, NEW COLONY, NIMDIH, P.O + THANA-
CHAIBASA, DISTRICT- WEST SINGHBHUM, JHARKHAND, 833201

EXECUTIVE SUMMARY

1.0 Executive Summary

Khakhanduwa Stone Deposit is located at Mauza- Khakhanduwa, Plot No.- 1(P), Thana No.- 309, Thana- Govindpur, Anchal- Govindpur, District- Nawada, Bihar over an area of 16.0 Acre / 6.475 ha. Earlier, the State Government had granted consent for mining to M/s Patel Agri Industries Private Limited, Director– Shri Kunkun Prasad, vide Letter No. 1702/Kh, dated 31.12.2018. Subsequently, the Collector Cum District Magistrate, Nawada (Khanan Branch) has transferred the said consent in favour of M/s Bhagwati Stone Crusher, Partners – Smt. Surekha Devi and Shri Bipin Patel, having address near Santoshi Temple, New Colony, Nimdih, P.O. & P.S.– Chaibasa, District – West Singhbhum, Jharkhand, vide Letter No. 5297/Khanan, Nawada dated 22.12.2025. Annual production of stone is 1034482.75 cum Per Annum or 3000000 MT/Annum and 3448.27 Cum per Day or 10000 Ton per Day. The estimated project cost is **16300 lakhs**. Approved mine plan is attached as **Annexure-I**

This mining project falls under Category “B1” Project.

Salient features of the project

Project Name	“Khakhanduwa Stone Deposit” by M/s Bhagwati Stone Crusher		
Location of Mine Site	Mauza- Khakhanduwa, Thana- Govindpur, District- Nawada, Bihar		
	KHATA NO.	PLOT NO.	
	85	1(P)	
	Pillar No.	Latitude	Longitude
	1	24°47'12.987"N	85°36'01.845"E
	2	24°47'13.796"N	85°36'03.814"E
	3	24°47'12.576"N	85°36'05.788"E
	4	24°47'11.461"N	85°36'07.929"E
	5	24°47'10.388"N	85°36'10.881"E
	6	24°47'08.809"N	85°36'15.000"E
	7	24°47'07.865"N	85°36'13.315"E
	8	24°47'06.937"N	85°36'11.648"E
	9	24°47'05.991"N	85°36'09.775"E
	10	24°47'04.692"N	85°36'06.944"E
	11	24°47'03.444"N	85°36'04.075"E
Minerals of mine	Stone		

Total Mineable reserves	5,189,320.5 Cum or 15049029.45 Tonnes
Life of mine	Five Years
Proposed production of mine	1034482.75 Cum Per Annum or 3000000 MT/Annum 3448.27 Cum Per Day or 10000 Ton Per Day
Method of mining	Open Cast Other than Fully Mechanized Method (OFTM), Control Drilling & Blasting
No of working days	300 days
Water demand	Total water requirement is about 14.92 KLD. 0.72 KLD for domestic + drinking use, 10.0 KLD for dust suppression and 4.2 KLD for plantation purposes
Sources of water	The drinking water will be available from nearby village by tractor tank manually by labors at the site.
Man power	16 Persons
Nearest railway station	Nawada Railway Station, Approx. 12.3 Km towards NW
Nearest State Highway/ National highway	Govindpur- Baraiba Rd, Approx. 2.7 Km towards NE NH-20 (Ranchi-Patna Rd), Approx. 6.5 Km towards West Akbarpur Gobindpur Rd, Approx. 4.0 Km towards South
Nearest airport	Gaya International Airport, Approx. 66.60 Km towards West.
Seismic zone	Zone IV as per seismic zone map of India

1.2 Proposed Planning

Mining method: - Open Cast Other than Fully Mechanized Method (OFTM), Control Drilling & Blasting.

Estimated Project Cost - **16300 lakhs.**

Annual Production - 1034482.75 cum Per Annum or 3000000 MT/Annum.

1.3 Conclusion

The production of mineral will be benefited to the State in the form of Royalty. Apart from this, the project will generate direct and indirect employment opportunities approx. 16 persons from the nearby villages. Also, the mine management will conduct medical camps at regular interval in the nearby villages and will help the nearby villages by tractor tank manually by labors at the site.

2. INTRODUCTION OF THE PROJECT/BACKGROUND INFORMATION

2.1 Identification of Project and Project Proponent

Khakhanduwa Stone Deposit is located at Mauza- Khakhanduwa, Khata No. 85, Plot No.- 1(P),

Thana No.- 309, Thana- Govindpur, Anchal- Govindpur, District- Nawada, Bihar over an area of 16.0 Acre / 6.475 ha. The concerned Khakhanduwa Stone Deposit is proposed by Applicant- M/s Bhagwati Stone Crusher, Partner- Surekha Devi & Bipin Patel, Near Santoshi Temple, New Colony, Nimdih, P.O + Thana- Chaibasa, District- West Singhbhum, Jharkhand, 833201. Earlier, the State Government had granted consent for mining to M/s Patel Agri Industries Private Limited, Director– Shri Kunkun Prasad, vide Letter No. 1702/Kh, dated 31.12.2018. Subsequently, the Collector Cum District Magistrate, Nawada (Khanan Branch) has transferred the said consent in favour of M/s Bhagwati Stone Crusher, Partners – Smt. Surekha Devi and Shri Bipin Patel, having address near Santoshi Temple, New Colony, Nimdih, P.O. & P.S.– Chaibasa, District – West Singhbhum, Jharkhand, vide Letter No. 5297/Khanan, Nawada dated 22.12.2025. Annual production of stone is 1034482.75 Cum Per Annum or 3000000 MT/Annum and 3448.27 Cum Per Day or 10000 Ton Per Day. The estimated project cost is **16300 lakhs**. The expected life of mine is 05 Years. Approved mine plan is attached as **Annexure-I**.

2.2 Brief Information about the Project: Annual production of stone is 1034482.75 cum Per Annum or 3000000 MT/Annum of stone by Open Cast Other than Fully Mechanized Method (OFTM), Control Drilling & Blasting. The mine lease area is 16.0 Acre/ 6.475 ha. The expected life of the mine is 05 years. Water requirement for the proposed project for drinking use, dust suppression and other use will be 14.92 KLD which will be taken from nearby villages and supplied by private water tankers.

2.3 Need for the Project and Its Importance to the Country or Region

Achieving a huge infrastructure as being envisaged by Government of India particularly in road and housing sector requires basic building materials. The stone is one of primary building material required for the purpose. The stone mining activities as proposed are the backbone of all construction and infrastructure projects as the raw material for construction is available only from such mining. The stone extracted is in high demand at the local market for road construction and real estate industry.

The usage of stone is very much project specific, and market demand stands from very large size boulder to fined grained dust. Apart from its use in building construction and in making of roads,

it can directly use as boulders of different sizes for River Anti-erosion, Dam Construction, embankments etc.

2.4 Demands-Supply Gap

The demand for stone is ever growing with the growth of the infrastructure sector in our country. The mineral is used in the construction activities like roads, buildings, bridges etc. The requirement for the mineral is always high in the nearby cities and towns. Therefore, there is always a good demand of the mineral in the domestic market.

2.5 Imports vs. Indigenous Production

Development needs will be met only through indigenous produced stone against the high cost of imported material.

2.6 Export Possibility

Project Proponent would like to sale out the mineral in domestic market only.

2.7 Domestic/ Export Markets

Project Proponent would like to sale out in domestic market as per requirement.

No export is proposed.

2.8 Employment Generation

About 16 persons will be employed along with Mine Manager, Supervisor and Other.

Sl. No	Designation of Employee	No. of Persons
1.	Mine manager (SCC)	01
2.	Supervisor	05
3.	Other	10
Total		16

3. PROJECT DESCRIPTION

3.1 Type of Project Including Interlinked and Interdependent Projects, If Any.

The mine is over an area of 16.0 Acre/ 6.475 hectares. Annual production of stone is 1034482.75 Cum Per Annum or 3000000 MT/Annum.

This is an independent mining project and there are no interlinked projects involved.

Location

The mining lease area is located at Mauza- Khakhanduwa, Plot No.- 1(P), Thana No.- 309, Thana- Govindpur, Anchal- Govindpur, District- Nawada, Bihar over an area of 16.0 Acre / 6.475 ha.

LOCATION MAP

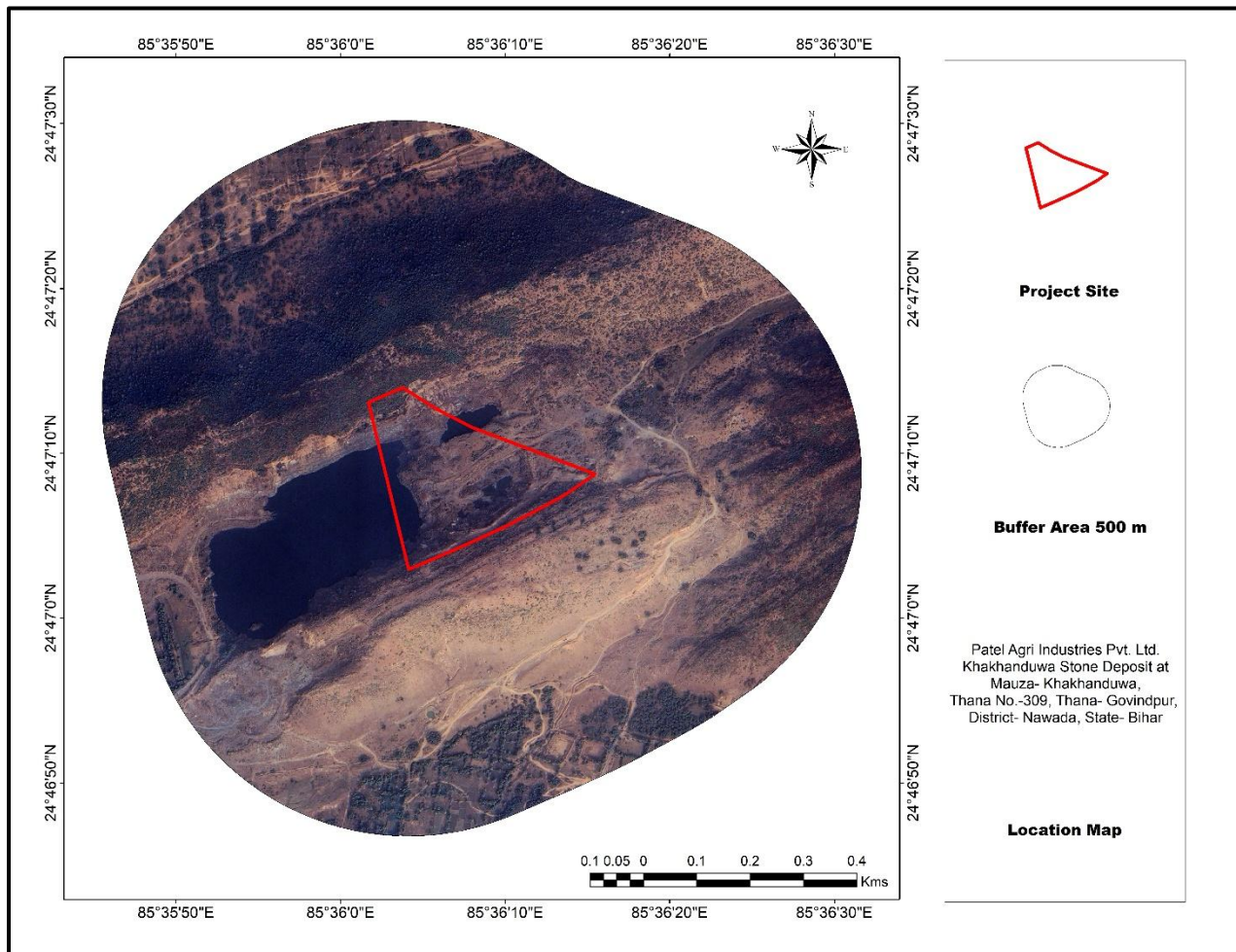


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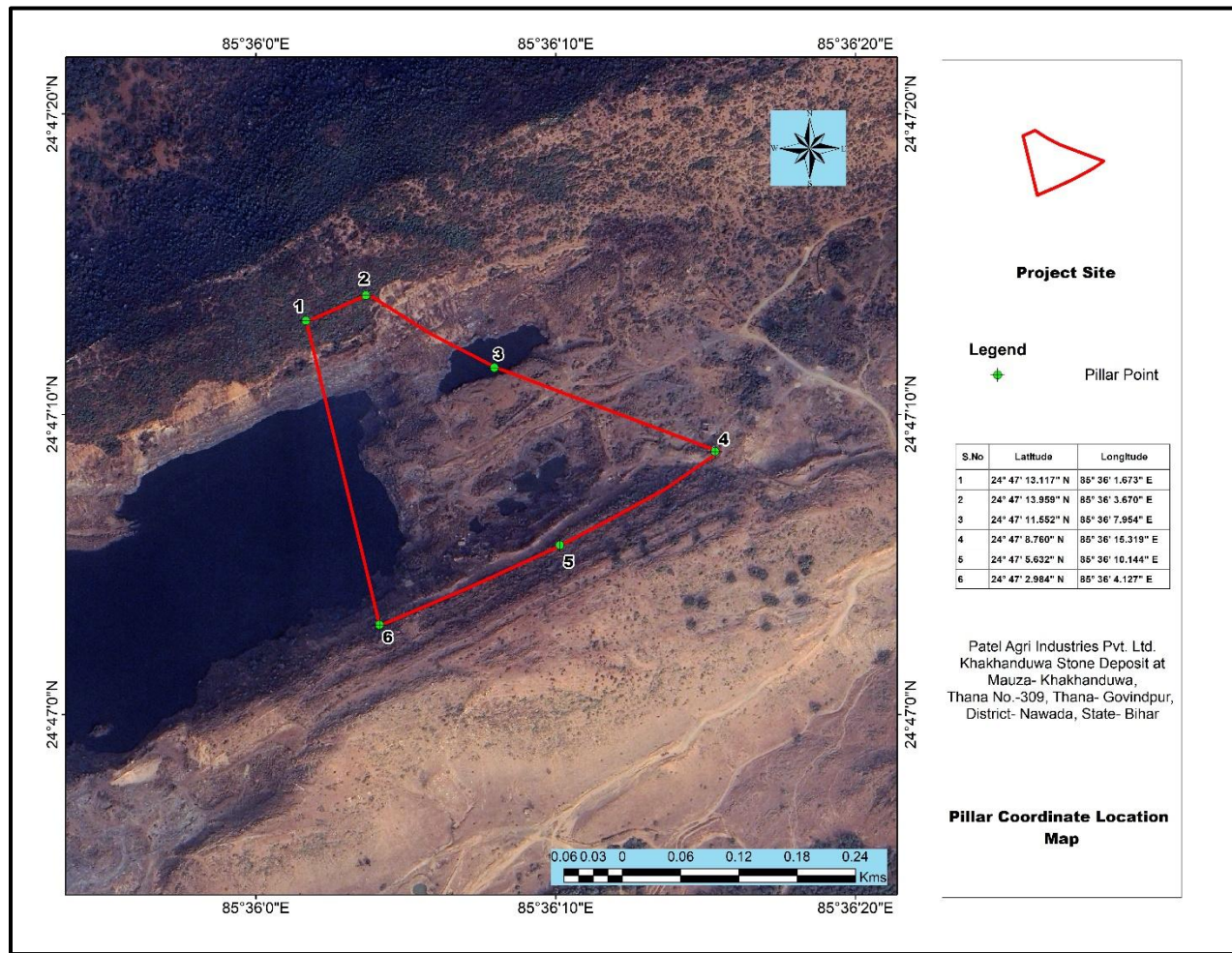
PRE FEASIBILITY REPORT

SL. No.	Particulars	Name	Distance (Km)	Direction
1.	Nearest Railway Station	Nawada Railway Station	12.3	NW
2.	Nearest Airport	Gaya International Airport	66.60	West
3.	Nearest School	Higher Secondary School, Kulna	2.5	WSW
		Rampur Primary School	1.5	SSE
4.	Nearest National/State Highway	Govindpur- Baraiba Rd	2.7	NE
		NH-20 (Ranchi-Patna Rd)	6.5	West
		Akbarpur Gobindpur Rd	4.0	South
5.	Nearest Hospital	Sadar Hospital, Nawada	12.5	NW
		Rosmak Jeevan Hospital, Nawada	12.0	NW
		Referral Hospital, Govindpur	8.5	East
6.	Nearest Police Station	Police Station, Akbarpur	5.9	SW
7.	Nearest Temple	Shiv Mandir, Sirampur	1.2	West
		Devi Sthan, Gajodih	1.3	SE
8.	Water Bodies	Sakri River	3.2	NE
		Panchane River	1.3	SSW

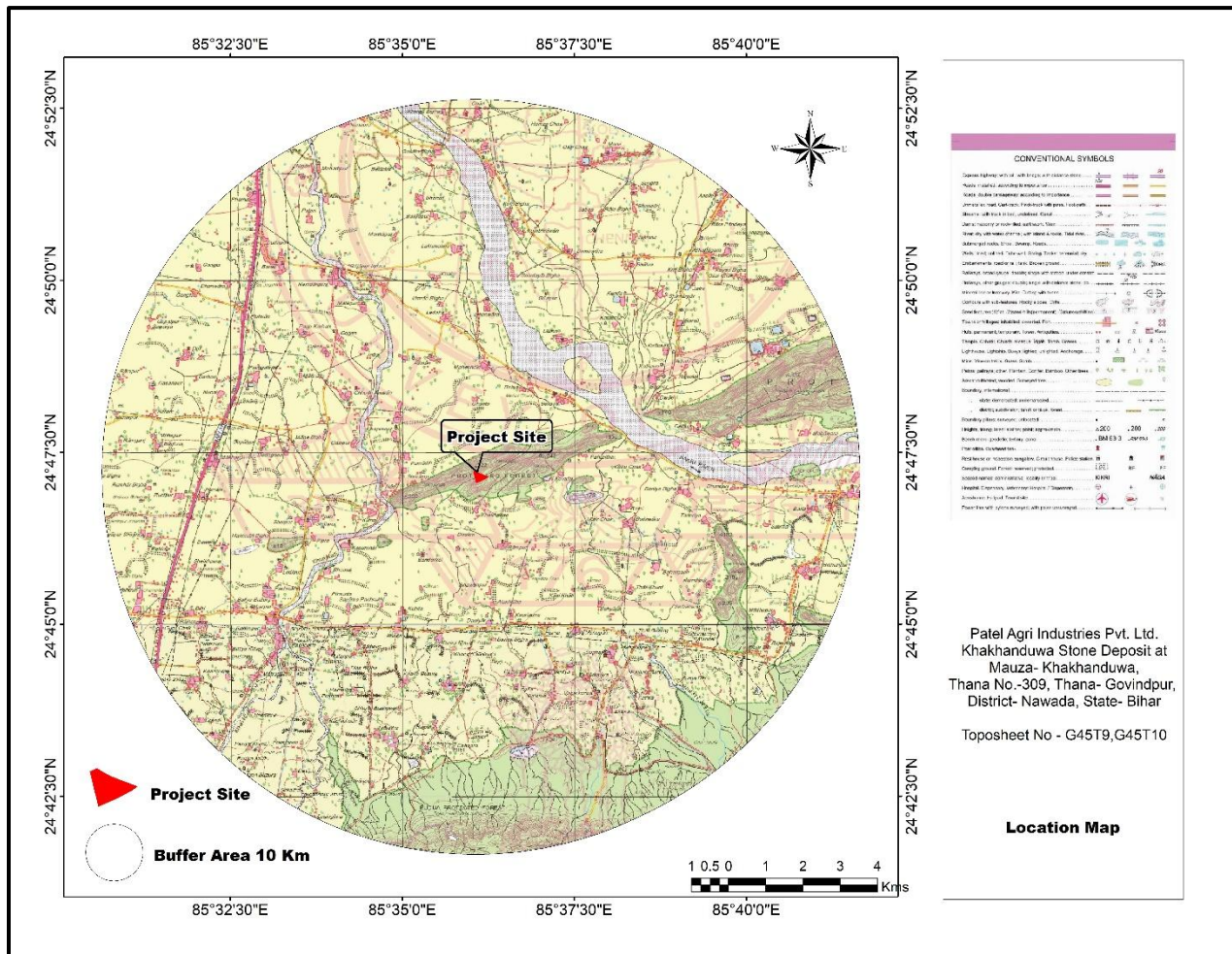
500M GOOLE MAP



PILLAR COORDINATE MAP



10 KM TOPOSHEET MAP



3.2 Details of Alternate Sites

Mining is site specific so no alternative site is proposed.

3.2.1 Size or magnitude of operation

The total mineral reserve would be 15049029.45 MT and taking the maximum production target @3000000.00 MT per year during this mining plan period, the life of the mine is calculated to 5.02 years. The number of working days in the year would be **300**. For the purpose **06** persons will be employed from the nearby villages.

3.3 Physiography

The allotted area for mining lease over 16.0 acres of land non- forest govt. waste land situated in village Khakhanduwa, Thana- Govindpur, Thana No. 309, Plot No. 1(P), Khata No. 85, in the district Nawada of Bihar State. The area is located in survey of India toposheet no. 72H/9(G45/9) and bounded by Latitude 24°47'3.444"N to 24°47'13.796"N Longitude 85°36'01.845"E to 85°15.000"E. Akbarpur- Gobindpur road is crossing on the Southern Side at a distance about 4.0 Km from the allotted mining lease area. Further it is connected to NH-31 road. The nearest Railway station is Nawada Railway Station which is located in north western side at a distance Approx. 12.3 Km from the project site.

The area represents hillock of stone trending NE-SW ranging from R.L 185 m to R.L 145 m above MSL. The highest elevation i.e. 185 m is situated on the Northern part of the area. The mica schist boulders exposed in entire area.

3.3.1 Regional Geology:

The main geological formation in the area is pre-Cambrian rocks of Archaean age. The crystalline rocks in the district area mica schist, granite gneiss, quartzite's & quartz schist, hornblende schist & mica pegmatite etc. These rock types constitutes the hill ranges & cover south and eastern parts of Rajauli blocks, southern parts of Sirdala block north central & southern parts of Govindpur blocks & south, south- eastern & northern parts of Kauakol block. The entire district is underlain by the rocks of wide variety of geological formation ranging in age from Archean to Recent. The main being Archean proterozoic, permo- carboniferous & recent. Phyllites, mica-schist, granite gneiss & intrusive granite are the main geological formation of the district. Sporadic occurrence of dolerite, quartz pegmatites veins and quartiles are also found thin deposits of alluvium are found along the course of rivers.

The stratigraphic sequence of Nawada is as follows:

Stratigraphic Succession:

Satpura Schist	Schists, Phyllite, Quartzite
Proterozoic Schist	Amphibolite, quartzite, granites, dolerites and pegmatite.

Archaean Gneisses	Granites, Schist, Phyllites, quartzite, amphibolite's & intrusive all metamorphosed sedimentary and igneous rocks.
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3.3.2 Local geology and exploration already carried out:

The geology of the rock types of khakhanduwa Stone deposit follows the regional stratigraphy of this region. The stone boulders exposed throughout the area on the upper part of the hillocks as well as in the base of hillocks. The general trend of the deposition is along North to South. On the basis of geological field study, a geological map has been prepared with a contour interval of 5 m showing all rock types. (Refer Plate- 4). The local geological succession of rocks in the area as observed during field study is as below-

Amphibolites (Stone deposit)

Biotitic granite (Stone deposit)

Alluvial Soil

3.3.3 Exploration proposed to be carried out in the next five years

No boreholes are required for the exploration process, because of surrounding quarry comprises lithology in the applied area.

3.4 Project description with process details

3.4.1 Method of Mining

The mining operation in this area shall be carried out by open cast other than fully mechanized method (OFTM) by using HRMM for excavation, production etc. with a combination of Hyva. The mine is planned to develop with the maximum production capacity of 1034482.75 Cum Per Annum or 3000000 MT/Annum and 3448.27 Cum per Day or 10000 Ton per Day. Out of the total production, a portion of stone boulders will be sold directly depending on the market and also the stone boulders will be transported to the lessee own proposed crushers & screening units(300 TPH- 4 nos.) established outside the lease area in accordance with rule 39(4) of Bihar Minerals(Concession, Prevention of Illegal Mining, Transportation & Storage) Rules 2019. Large sized boulders will be excavated by drilling/blasting and also by using hydraulic rock breakers.

Drilling and blasting shall be carried out by engaging authorized explosive agency under competent supervision to fragmentation and dislodging of stone bed and then reduce to required size for the applicants own crushing/screening units. Rock breaker is also proposed to be engaged for breaking the boulders and to reduce the drilling/blasting in the area.

The development of the faces shall be carried out keeping the bench height at 9 m and width not less than 10 m for easy plying of HEMM. The individual slope of benches would be kept 42° from vertical at ultimate limit. For maintain 9.0 m bench height and deep hole blasting, applicant will take permission from DGMS.

Drilling

The deep hole drilling will be carried out by wagon drills driven by air compressors. Holes will be drilled in single row as well as in multi rows on staggered pattern depending upon the strata condition & production requirement to achieve optimum result in term of fragmentation, economy and least possible effect on the surrounding environment.

Blasting

In this mine, Controlled blasting technique shall be adopted. Wet drilling system shall be adopted for loosening of the hard rock mass for ease in excavation & loading. A powder factor of 7 tonnes of stone per Kg explosive is considered for estimating explosive requirement. 1/3 rd hole is stemmed and rest is charged with power gel explosive with 83mm dia and 25mm dia cartridges. Holes will be initiated by Codex Fuse which in turns will be initiated by ordinary detonators. The number of holes to be fired in one round should not exceed 10 holes. Blasting in the area will be done on contractual basis to avoid storage of explosive and risk factors involved.

The blasting parameters adopted would be as under:

Diameter of drill	: 100mm
Bench Height	: 9.0 m
Burden	: 2.0 m
Spacing	: 3.0 m
Depth of Hole	: 8.0 m
Output/hole	: Burden* spacing*depth of the hole (2*3*8=48 Cum)
Average no. of hole that can be drilled per shift: 8	

Total Working Day : 300

Volume of rock that can be drilled/broken per shift per machine

(48Cum *8) :384 Cum

Total volume of rock that can be drilled/broken per year per machine with 80% utilized factor

(384 cum*300*0.8) : 92160 Cum

Loading and Transportation:

Loader will be used for loading purpose.

Haulage and Transport equipment:

15 cum capacity of Hyva will be deployed for transporting the excavated stone from mine head to crushing unit. 15 cum capacity of Hyva will be deployed for transporting the excavated stone from mine head to destination.

Production details:

Year wise Production of boulder stone from the area has been calculated by cross sectional method. The cross-sectional area has been multiplied by the advancement to be worked in each bench as length of influence to get the bulk volume. Thus the value obtained has been multiplied by tonnage factor (T.F.) to get the actual production of stone in each bench. Year wise calculation has been made separately and the details of year wise development of the quarry are given below:

The proposed production of stone for five years:

Year	Production in Cum	Production in (Tones)	OB Waste	Total waste in cum	Stripping ratio t/m3
1 st Year	1034488.00	3000015.20	Nil	21112.00	1:0.007
2 nd Year	1034483.10	3000000.29	Nil	21112.00	1:0.007
3 rd Year	1034488.00	3000015.20	Nil	21112.00	1:0.007
4 th Year	1034488.00	3000015.20	Nil	21112.00	1:0.007
5 th Year	1034488.00	3000015.20	Nil	21112.00	1:0.007
Total	5172435.10	15000061.79		105560.00	

Details of Machinery to be deployed

Since the deposit in this area is massive and compact in nature. It is proposed to carry out open cast other than fully mechanized mining in this area during the plan period i.e., five years. wagon drill machine will be deployed for drilling of shot holes of 100 mm diameter and breaking of

stone at the required size will be done by rock breaker. For blasting of holes with burden and spacing of 2 m x 3 m in a staggered grid pattern will be followed. Purpose production per annum 3000000 ton assuming 300 working days.. The list of equipment's is given below:

List of mining equipment's

S. No	Type of machine	Size/ capacity	Make	Requirement	Motive power		Status
					Estimated Fule		
1	Excavators	2.1 cum	Tata/L&T	09	Diesel	11 liter/h= 792 liter./day	On hire
2.	Rock Breaker	-	Tata/L&T	04	Diesel	12 liter/h= 384 liter./day	On hire
3.	Wagon drill & Tractor Compressor Compressor	100mm	Atlas Coco	06	Diesel	10 liter/h= 480 liter./day	On hire
4.	Hyva	8.620 cum	TATA	01	Diesel	1 liter/h= 10 liter./day	On hire
	Hyva	15 cum	TATA	16	Diesel	2 liter/h= 160 liter./day	On hire
5	Water Tanker	4000 ltrs.	TATA	01	Diesel	20 liter/day	On hire
6	Crusher with Screen	300 tph	-	04	Diesel	1500 liter/day	-
7	Pump Machine	10 HP	-	01	Diesel	10 liter/day	-

3.5 Raw Material Required Along with Estimated Quantity, Likely Source, Marketing Area of Final Product/S, Mode of Transport of Raw Material and Finished Product

No raw material will be required for production of Stone.

Loading of stone will be done with the help of shovel and excavators at face and at stock yard as well. Stone will be loaded in truck by machines. The Hyva will be used for transportation of mineral from mine site to destination.

3.6 Resource Optimization/ Recycling and Reuse

Only water will be used as resource optimization /recycling at mine site.

3.7 Availability of Water Its Source, Energy/ Power Requirement and Source

3.7.1 Water Requirement

Total water requirement is about 14.92 KLD= 0.72 KLD (Drinking & Domestic Uses) + 4.2 KLD Plantation) + 10.0 KLD (Dust Suppression).

Activity	Water requirement (KLD)
Drinking water (Human) 16@ 45 LPCD	0.72
Water Sprinkling (Source-Water Tanker)	10.0
Plantation (Source-Water Tanker)	4.2
Total	14.92

3.7.2 Power

The operation will be done only in day time hence there is no power requirement for the project at site. The electricity facility is not available at mining lease area. Only diesel equipment will be used.

3.8 Quantity of wastes to be generated (Liquid and solid) and Scheme for their Management/Disposal

3.8.1 Nature of Waste

The entire produce of stone will be used as Road, Railway and building construction. It has been calculated that 105560.0 cum waste (Intercalated) shall be generated during this plan period. This waste shall be dumped temporarily towards south eastern side of the lease area. The yearly generated waste material from this temporary dump shall be utilized for making and maintaining the approach road, mine road and village road regularly. The approach road within lease area will be made concrete road to minimize dust.

During rainy season to prevent dump failure/soil erosion, toe-wall with weep-holes and garland drains will be constructed.

4. SITE ANALYSIS

4.1 Connectivity

The area is well connected with road and rail transport. The district is well served by a network of metalled and unmetalled roads. Details of site connectivity are given below:

Nearest Railway Station	➤ Nawada Railway Station, Approx. 12.3 Km towards NW.
Nearest Airport	➤ Gaya International Airport, Approx. 66.60 Km towards West (Source: Google earth & Aerial Distance)
Road connectivity	➤ Govindpur- Baraiba Rd, Approx. 2.7 Km towards NE ➤ NH-20 (Ranchi-Patna Rd), Approx. 6.5 Km towards West ➤ Akbarpur- Gobindpur Rd, Approx. 4.0 Km towards South.

4.2 Landform, Land use and Land ownership

4.2.1 Landform

Stone and soil are mostly occupying the mining lease area which is non-forest govt. waste land.. The surface texture varies from rugged terrain of debris and mild gradient terrain covered by bushes. There is no agriculture land exist in the area.

4.2.2 Land use

The area does not fall in forest land. There is no village or human settlement in the lease area. There is no public road passing through the area.

4.2.3 Land Ownership

It is a non-forest govt. waste land which is not fit for agriculture/Vegetation.

4.3 Topography

The allotted area for mining lease over 16.0 acres of land non- forest govt. waste land situated in village Khakhanduwa, Thana- Govindpur, Thana No. 309, Plot No. 1(P), Khata No. 85, in the district Nawada of Bihar State. The area is located in survey of India toposheet no. 72H/9(G45/9)

and bounded by Latitude 24°47'3.444"N to 24°47'13.796"N Longitude 85°36'01.845"E to 85°15.000"E. Akbarpur- Gobindpur road is crossing on the Southern Side at a distance about 4.0 Km from the allotted mining lease area. Further it is connected to NH-31 road. The nearest Railway station is Nawada Railway Station which is located in north western side at a distance Approx. 12.3 Km from the project site.

The area represents hillock of stone trending NE-SW ranging from R.L 185 m to R.L 145 m above MSL. The highest elevation i.e. 185 m is situated on the Northern part of the area. The mica schist boulders exposed in entire area.

4.4 Existing land Use Pattern

The area does not fall in forest land. There is no village or human settlement in the lease area. There is no public road passing through the area.

Category	Area in Hectare
Excavation	3.354
Waste Dump	Nil
Road	0.773
Infrastructure	0.030
Plantation(Green Belt)	Nil
Total	4.157

4.5 Existing Infrastructure

There is no existing infrastructure facility is available in the area but in the five years as per the approved mining plan for effective and proper working of the mine, it has been proposed to construct and provide site services like office, first aid, rest shelter; urinals etc. as per the statutory requirements.

4.6 Soil Classification

Major soil class in the district is sandy and loamy soil. As per the data from Soil Conservation Office, Nawada, 479072 ha area of the district is covered by sandy and loamy soil out of which

231016 ha land area having land slope of 0 to 3%. Based on texture, the loam in the district can be categorized into eight soil classes. They are coarse loamy-fine loamy, fine, fine to fine loamy, fine to very fine, fine loamy, fine loamy to coarse loamy, fine loamy to fine, and loamy to fine loamy types.

4.7 Climatic Data from Secondary Sources

Monsoon rainfall initiates in the district by third week of June and continues till end of September. South West monsoon contributes major part of monsoon rainfall. The district receives maximum rainfall during the months of July and August. Winter season starts from month of November and lasts till February. Winter rain occurs in January and February. Normal rainfall (from 1951 to 2000) of the district is 1063 mm

The district experiences sub-tropical to sub-humid climate. Winter temperature ranges from 16⁰ C to as low as 4⁰ C whereas during the summer it reaches 46⁰ C. The district experiences severe cold during winter whereas on the other hand in summer it is very hot. Summer season starts from mid of March and it continues up to mid of June, after that monsoon starts. The nights are generally hot from end of May till first break of monsoon.

5 PLANNING BRIEF

5.1 Planning Concept:

The mining operation in this area shall be carried out by open cast other than fully mechanized method (OFTM) by using HRMM for excavation, production etc. with a combination of Hyva. The mine is planned to develop with the maximum production capacity of 1034482.75 Cum Per Annum or 3000000 MT/Annum and 3448.27 Cum per Day or 10000 Ton per Day. Out of the total production, a portion of stone boulders will be sold directly depending on the market and also the stone boulders will be transported to the lessee own proposed crushers & screening units(300 TPH-4 nos.) established outside the lease area in accordance with rule 39(4) of Bihar Minerals(Concession, Prevention of Illegal Mining, Transportation & Storage) Rules 2019. Large sized boulders will be excavated by drilling/blasting and also by using hydraulic rock breakers. Drilling and blasting shall be carried out by engaging authorized explosive agency under competent supervision to fragmentation and dislodging of stone bed and then reduce to required

size for the applicants own crushing/screening units. Rock breaker is also proposed to be engaged for breaking the boulders and to reduce the drilling/blasting in the area.

5.2 Land use Planning

	Existing	At the end of plan period	At Conceptual period
Category	Area in Hectares	Area in Hectares	Area in Hectares
Excavation	3.354	5.917	5.917(3.337 ha area shall be left as water reservoir for rain water.
Waste Dump	-	0.205(Comes under mining)	Nil(Utilized for road maintained)
Road	0.773	-	Nil(Utilized for local villagers)
Infrastructure	0.030	-	Nil(Dismantled comes under Mining)
Plantation(Green Belt)	Nil	0.558(Within safety zone)	0.558(Within safety zone)
Total	4.157	6.475	6.475

5.3 Assessment of Infrastructure demand (Physical and Social)

On the basis of the preliminary site visit, the infrastructure demand in the village was assessed on the basis of need and priority.

Physical Infrastructure

The road facility is already available which shall be used and maintained. Other infrastructure facilities required such as transport etc. for mine labors is available by way of jeep, two wheelers etc. Medical facility is available in the nearby village.

Social Infrastructure

An occupational health unit will be organized and the proposed measures will be adopted:

1. Periodical Medical Checkup program for all the workers and first-aid box with necessary equipment will be provided.
2. Training for workers regarding occupational hazards and
3. Safety equipment i.e. dusts mask, safety shoes, gloves etc.

5.4 Amenities/Facilities

The following facilities/amenities will be extended by the mine management:

- Direct and indirect Employment, most of which most will be from nearby villages.
- Arrangements for safe and healthy working conditions & temporary rest shelters.
- Provision for safe Drinking water.
- Provision for Personal protective equipment (PPE).
- First-Aid facilities and Health check-up camps for the workers.

Conducting medical camps for workers and nearby villagers at regular interval

6. PROPOSED INFRASTRUCTURE

6.1 Industrial Area (Processing Area)

The applicant will construct a site office within the lease boundary along with rest shelter, and first aid station etc., as required.

6.3 Green Belt

Total number of saplings to be planted in the entire plan period will be 1400 saplings. Green Belt area will be developed along the periphery of mining lease area and haulage route, in consultation with local Authority (Plantation density considered is 1400 plants on 0.558 Ha areas.)

Year	Location	Area to be covered (Ha.)	No. of plants	Species
1 st Year	Within 7.5 m in safety zone area	0.112	280	Neem, Amla, Imli, Bargad, Pakar etc.
2 nd Year	Within 7.5 m in safety zone area	0.112	280	
3 rd Year	Within 7.5 m in safety zone area	0.112	280	
4 th Year	Within 7.5 m in safety zone area	0.112	280	

	zone area			
5 th Year	Within 7.5 m in safety zone area	0.112	280	
Total		0.558	1400	

Place of proposed plantation

The plantation shall be done at the boundary of the Lease and Both sides of the transportation route.

6.4 Social Infrastructure

- Road facility (existing roads will be maintained regularly)
- Employment opportunity
- Medical camps
- Social awareness camps
- Donations to schools
- Secondary employment opportunities
- Formation of self- helps groups for the women in nearby villages.

6.5 Drinking Water Management

The required water for drinking and domestic purpose is required to be **0.72 KLD**. Drinking water will be provided by the water tanker.

6.6 Sewerage System

Domestic waste water will be treated into portable toilets, disposed by water tankers.

6.7 Industrial Waste Management: Not applicable

Describe the type, quality and quantity of over burden, mineral rejects etc. available and their disposal practices. If no utilization of waste material is proposed, the manner in which the waste material will be stabilized should be described. The protective measures to be taken for prevention of siltation, erosion and dust generation from these waste materials should also be described. If toxic and hazardous elements present in the waste material, the protective measures to be taken for prevention of their dispersal in the air environment, leaching in the surface and ground water etc. should be described.

6.8 Power Requirement & Supply/Source

The operation will be done only in day time hence there is no power requirement for the project at site. The electricity is not available at mining lease area. Only diesel equipment will be used.

6.9 Environment Management Plan

Budget allocated for EMP/ Mitigative measures to protect environment

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S.NO	Mitigative measures to protect Environment	Capital Cost (n Lakh)	Recurring cost (In Lakh)
01	Water Sprinkling/Air pollution control (Dust Suppression along haulage road & mine)	5.0	2.0
02.	Green belt development safety zone 7.5 mtr and along the road (for each plants including hedges and fences) @ No. of plants 1400 x 1000Rs.	14.0	1.0
03	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Nil	0.50
	TOTAL	19.0	3.5

7. REHABILITATION AND RESETTLEMENT (R & R) PLAN

As no personnel are expected to be migrated due to mining in the lease area and the adjoining region is also having a good mineral potential, the rehabilitation of the employees is not going to be a problem. The workers and other staff can get job in the neighboring areas after the end of life of mine.

8 PROJECT SCHEDULE & COST ESTIMATES

8.1 Likely Date of Start of Construction and Likely Date of Completion

No construction activities are proposed. The mining activity will commence only after receiving environmental clearance and other statutory clearance.

8.2 Estimated Project Cost Along with Analysis in Terms of Economic Viability of the Project

The Total project cost is estimated to be around Rs. **16300 lakhs.**

S. No.	Description	Cost in Rs. (in Lakhs)
1.	Auction Cost	15600/-
2.	Cost of Labour & Equipment	600/-
3.	Miscellaneous	100/-
TOTAL		16300/-

9.0 ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS)

The proposed mine will bring about economic benefits to the state in the form of Royalty of mineral and to the local people by getting direct and secondary employment opportunities. The material is in high demand at the local market for real estate industry. Filling some or all of the cores with concrete or concrete with steel reinforcement (typically rebar) offers much greater tensile and lateral strength to structures.

Advantages:

- The use of material such as bricks and stones can increase the thermal mass of a building and can protect the building from fire.
- Most types of typically will not require painting and so it can provide a structure with reduced life-cycle costs.
- Stone is non-combustible product.
- Stone walls are more resistant to projectiles, such as debris from hurricanes or tornadoes.

This project operation will provide livelihood to the poorest section of the society/economically backward population and tribal in the area. It provides employment to the people residing in vicinity directly or indirectly. The mine management will also help nearby villages by providing aid to school, conducting medical and social awareness camps, helping in formation of self-help groups, etc. Thus the project will bring about socio-economic improvement of the area and will prove beneficial to the area.

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