

# PRE-FEASIBILITY REPORT

FOR

RIVER SAND (MINOR MINERAL) MINING PROJECT FOR

RIVERS GANGA, KARAMNASA, KAO, THORA AND

SURROUNDING AREAS OF ALL THE BALU GHATS

DISTRICT: BUXAR, BIHAR

CATEGORY – A

MINING LEASE AREA: 1141.09 HA.

PURPOSE PRODUCTION CAPACITY: 9,24,000 MTPA

PROPONENT

M/s. KATYAYNI CONTRACTORS PVT. LTD

R/o: 144-Parero, P.O Bihta, Patna (Bihar)

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	<b>3.0 Project Description</b>

## 1 EXECUTIVE SUMMARY

The proposed River Sand Minor Mineral Mining project of M/s. Katyayni Contractors Pvt. Ltd. is situated in Buxar District (Bihar) over an area of 1141.09 ha. The letter of intent has been issued in favour of M/s. Katyayni Contractors Pvt. Ltd. vide letter No. 211 Mine/ Buxar dated 12.08.2015 for 5 years. Copy of Letter of Intent (LOI) is enclosed as **ANNEXURE - I**.

Draft Mining Plan has been submitted to Department of Mines and Geology, Bihar.

The mining will be carried out by open-cast semi - mechanized method as per the Mining Plan. The entire mining area is government waste land. As per RMMCR 1986, validity of mining is 5 years from the date of registration. The proposed production is 9, 24,000 MTPA. The estimated cost of project will be Rs. 6.0 Crore

The mineral river sand is used for construction material for building, raw material for construction of dam, raw material for road construction, paving etc. and it will be dispatched in its crude form. There will be no beneficiation or treatment before its dispatch.

**Table 1-1: Salient Features of the project site**

S. No.	Particulars	Details
<b>A.</b>	<b>Nature of the Project</b>	River Sand (Minor Mineral) Mining Project
<b>B.</b>	<b>Size of the Project</b>	
<b>1.</b>	Mine Area	1141.09 Ha
<b>2.</b>	Proposed Production capacity	9, 24,000 MTPA
<b>C</b>	<b>Location Details</b>	
<b>1.</b>	Village	Sikraul, Rohinibhan (Dihari), Baikunthpur, Amsari (Dumrao), Shighnpuraikauna, Niyapur, Manhatha, Sidhipur, Lewar, Panchdharwa (Rupsagar), Chakki, Ramjiyawanganj (Kritpura), Narbatpursonpa (Chausa), Ahirauli, Karamnasa (Red Soil).
<b>2.</b>	Tehsil	Chausa, Dumrao, Nawa, Simri, Kesath, Chakki, Buxar, Nawanagar
<b>3.</b>	District	Buxar
<b>4.</b>	State	Bihar
<b>5.</b>	Latitude & Longitude	Description of each Ghats Pillar in the area is enclosed as <b>Annexure II</b> .

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S. No.	Particulars	Details															
6.	Toposheet No.	72C/2, 72C/3, 72C/6, 72C/7, 630/14, 630/15 and 630/16.															
<b>D</b>	<b>Environmental Settings of the Area</b>																
1.	Ecological Sensitive Areas	No ecologically sensitive area such as National Park, Wildlife sanctuary, biospheres-reserve, Protected & Reserved forests fall within 15 Km radius of the mining lease area.															
2.	River / water body	Available water bodies and rivers falls within 15 Km radius Buffer zone as follows: <table border="1" data-bbox="544 712 1227 925"> <thead> <tr> <th>NAME</th> <th>DISTANCE</th> <th>DIRECTIONS</th> </tr> </thead> <tbody> <tr> <td>Ahiroli Ghat</td> <td>3.66 km</td> <td>North</td> </tr> <tr> <td>Kiratpura Ghat</td> <td>3.01 km</td> <td>SW</td> </tr> <tr> <td>Sidhipur Ghat</td> <td>10.05 km</td> <td>East</td> </tr> <tr> <td>Chausa Ghat</td> <td>8.88 km</td> <td>SW</td> </tr> </tbody> </table>	NAME	DISTANCE	DIRECTIONS	Ahiroli Ghat	3.66 km	North	Kiratpura Ghat	3.01 km	SW	Sidhipur Ghat	10.05 km	East	Chausa Ghat	8.88 km	SW
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Ahiroli Ghat	3.66 km	North															
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Sidhipur Ghat	10.05 km	East															
Chausa Ghat	8.88 km	SW															
3.	Nearest Town / City	Buxar ~ 2.99 Km, in East Direction.															
4.	Nearest Railway Station	The nearest railway station is Buxar Railway Station which is about ~3.34 Km, in E direction.															
5.	Nearest Airport	Jayaprakash Narayan International Airport, Patna at a distance of around ~84.37 km in SE direction.															
6.	State Boundary	Yes, it does attract the General Condition as the Interstate Boundary of Uttar Pradesh-Bihar															
7.	Seismic Zone	Zone - IV [as per IS 1893 (Part-I): 2002]															
<b>D</b>	<b>Cost Details</b>																
1.	Total Project Cost	The proposed project cost will be Rs 6 Crore Capital Cost: Rs. 500 Lac/Annum Recurring Cost: Rs 350 Lac/Annum															
<b>E</b>	<b>Requirements of The Project</b>																
1.	Proposed Water Requirement	3.84 KLD															
2.	Fuel requirement	Diesel operated machinery will be the amount of diesel will vary according to the production of river sand approximately 2000 LPD of diesel will be required.															
3.	Man Power Requirement	Maximum Manpower required will be 128 (Skilled & Unskilled)															

River Sand (Minor Mineral) Mining Project for Rivers Ganga, Karamnasa, Kao, Thora, and surrounding areas of all the Balu Ghats (9,24,000 MTPA), ML Area 1141.09 ha, District- Buxar (Bihar)	<i>Pre-Feasibility Report</i>
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## 2 INTRODUCTION OF THE OBJECT/ BACKGROUND INFORMATION

The proposed River Sand Minor Mineral Mining project of M/s. Katyayni Contractors Pvt. Ltd. is situated in Buxar District (Bihar) over an area of 1141.09 ha. The letter of intent has been issued in favour of M/s. Katyayni Contractors Pvt. Ltd. vide letter No. 211 Mine/ Buxar dated 12.08.2015 for 5 years. Copy of Letter of Intent (LOI) is enclosed as **ANNEXURE - I**.

### 2.2 BRIEF DESCRIPTION OF THE NATURE OF PROJECT

This is a proposed River Sand Minor Mineral mining project. As per EIA Notification dated 14th Sep, 2006 and as amended till date, the project falls under, Category "A". It has been proposed to excavate approximately 9, 24,000 MTPA of River Sand Minor Mineral by open - cast, semi - mechanized method. The lease area is 1141.09 ha. Total mineable reserve available is 46214145 MTPA of River Sand Minor Mineral. The expected life of mine is 5 years. There is no waste or mineral rejects generation in the proposed mining of river sand. The River Sand will be transported through dumpers/trucks.

The mine lease area is flat river bed and river banks. There is no forest land or agriculture land in the mine lease area. The entire mining lease lies within River bed of Balu Ghats of rivers Ganga, Karamnasa, Kao, Thora & Noni River and there will be no change in land use after operation. The sand will be replenished every year during the monsoon season. The ultimate land use of the mine lease area will not be change. The daily water demand will be 3.84 KLD.

The daily water demand will be 3.84 KLD. The depth of water table is 6 – 8 m bgl in (Pre-Monsoon) and in (Post-Monsoon) depth of water table is 2-6 m below the general ground level.

### 2.1 NEED FOR THE PROJECT & ITS IMPORTANCE TO THE COUNTRY/ REGION

The mineral river sand is used for construction material for building, raw material for construction of dam, raw material for road construction, paving etc. and it will be dispatched in its crude form. There will be no beneficiation or treatment before its dispatch. Thus, keeping in mind this requirement, mining of River Sand Minor Mineral is necessary for durability and to beautify by carving as per the requirement of the consumer.

Maximum Manpower required will be 128 persons for the mining activity which will create direct & indirect opportunity for employment to local people. By mineral





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production the applicant will pay royalty & other taxes which will be an additional source of revenue for the region. The proposed River Sand Minor Mineral mining project will cater the need of individual and local market of construction resulting benefit in terms of socio - economic development.

## 2.2 DEMAND – SUPPLY GAP

River Sand is one of the essential components for building and infrastructural development projects. It has high demand in the market due to increased domestic, industrial and other infrastructural activities.

## 2.3 IMPORTS VS. INDIGENOUS PRODUCTION

In the current business scenario of River Sand (minor mineral), import of River Sand is not envisaged. It is for Captive use only no import is done.

## 2.4 EXPORT POSSIBILITY

Not applicable as proposed mine is for captive use only.

## 2.5 DOMESTIC/EXPORT MARKETS

Domestic demand is one of the chief reasons for the rapid growth of River Sand business in India. Thus, domestic market for River Sand (minor mineral) as industrial material is well established. River Sand (minor mineral) produced from the proposed River Sand mine will be used in building and infrastructural development projects. No export will be done.

## 2.6 EMPLOYMENT GENERATION (DIRECT AND INDIRECT) DUE TO THE PROJECT

Maximum Manpower required for the mining activity is 128 people. Priority for employment will be given to local workers. Following staff & workers are proposed to be employed when the mining activity will be going on in full fledged manner:-

**Table 2-1: Manpower requirement**

S. No.	Particulars	Number(s)
1.	General Manager	1
2.	Mining Engineer	3
3.	Mechanical Engineer	3
4.	Electrical Engineer	3
5.	Medical Officer	1
6.	Welfare Officer	1
7.	Security Officer	1
8.	Mines Foremen	4
9.	Mines Mate	3



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10.	Electrician	3
11.	H.E.M Operators	75
12.	Skilled Workers	20
13.	Semiskilled Workers	10
	<b>Total</b>	<b>128</b>

### **3 PROJECT DESCRIPTION**

#### **3.1 TYPE OF PROJECT INCLUDING INTERLINKED AND INDEPENDENT PROJECTS, IF ANY**

The mining of River Sand (Minor Mineral) is carried out by open-cast semi - mechanized method. This is an independent project. No interlinked project is proposed.

#### **3.2 LOCATION MAP WITH COORDINATES;**

The proposed River Sand Minor Mineral mine falls in M.L Area 1141.09 ha of District Buxar, State- Bihar. The project site falls in Survey of India Toposheet No. 72C/2, 72C/3, 72C/6, 72C/7, 630/14, 630/15 and 630/16.

The geographical location with respect to boundary pillars of the proposed River Sand area enclosed as *Annexure II*.

The location map is given below in *Figure 3-1*.

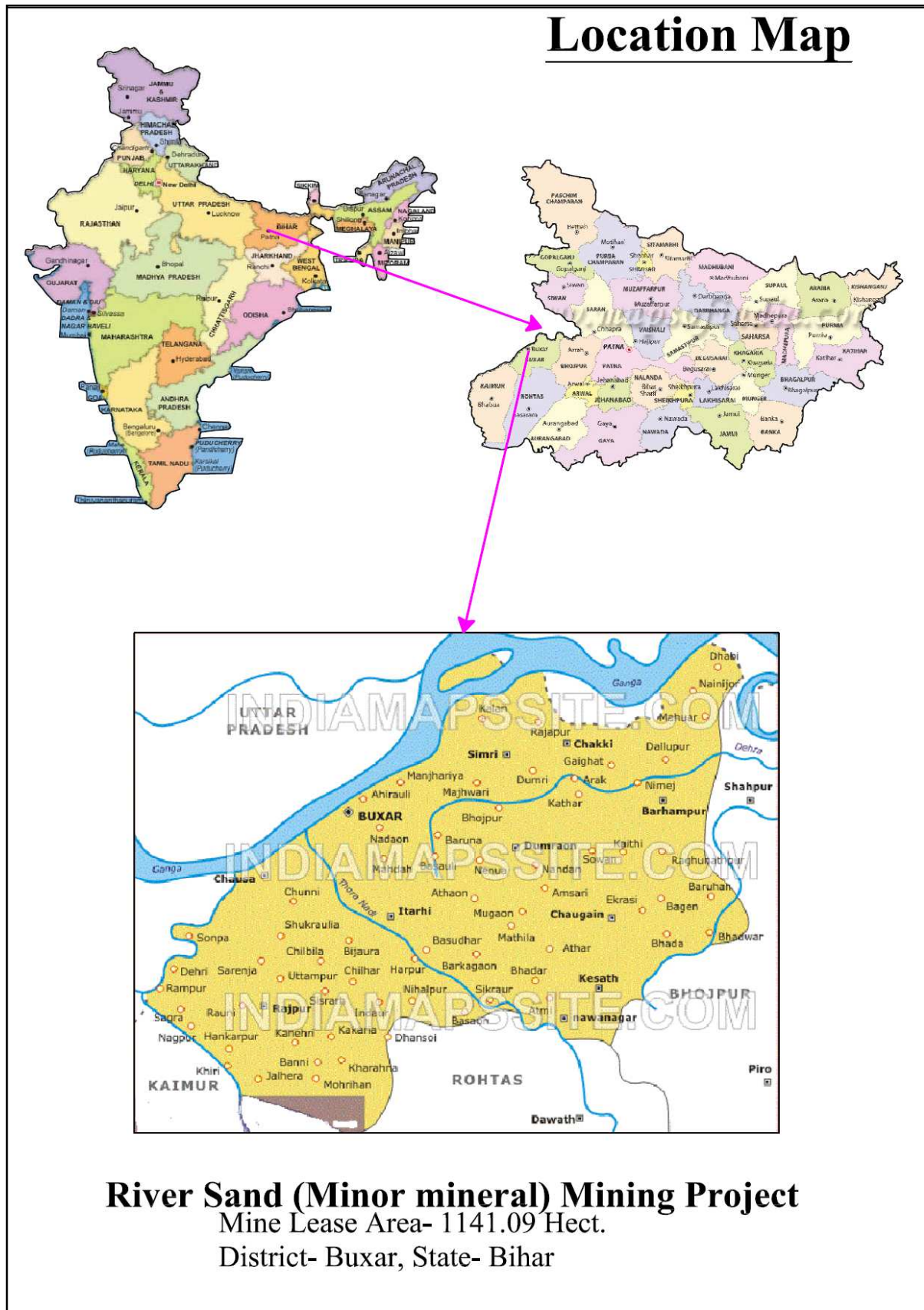


Figure 3-1 Location Map

### 3.3 DETAILS OF ALTERNATE SITES CONSIDERED

Mining activity is site specific hence no alternative sites examined.

### 3.4 SIZE OR MAGNITUDE OF OPERATION

Mine area for the proposed River Sand Minor Mineral mine is 1141.09 ha and proposed production capacity is 9, 24,000 MTPA.

#### 3.4.1 REGIONAL GEOLOGY

Regionally, the area constitutes a part of the Ganga River Basin. The north-eastern part is predominantly characterized by sedimentary lithology in the Sub-Himalayan zone comprising Subathus, Dagshais, Kasaulis and Siwaliks. A general Regional stratigraphic sequence of the area is given below-

	Age	Geology	Geography
Increasing antiquity ↓	Quaternary	Alluvial deposits (Sand, Clay, Silt, fragments)	North Bihar Plain & Central Bihar Plain
	Tertiary	Sandstones and Clay Stones	North Champaran Hills
	Gondwana	Coal Measures, Forming a series of small outlier basins	Banka district
Increasing antiquity ↓	Vindhya	Sandstones, Shales, Limestones etc.	Parts of Bhabhua and Rohtas dist.
	Satpura	Schist, Phyllite, Quartzite	Part of Aurangabad, Gaya, Nawada, Nalanda, Sheikhpura and Munger Dist.
	Proterozoic	Mica Schist, amphi- bolite, quartzite, granite, dolerite and	Nawada, Jamui & Banka

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Archaean	pegmatite Gneisses, Granites, Schists, Phyllites, Quartzites, amphibolites & intrusives all metamorphosed sedimentary and igneous rocks	Parts of Aurangabad, Gaya, Nawada, Jamui, Banka and Bhagalpur
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### 3.4.2 LOCAL GEOLOGY:-

The river sand exposed in the river beds of Ganga, Karamnasa, Kao, Thora & Noni and surrounding areas is the product of the deposition of the sediments brought and deposited in the flood plains of River Ganga. These sediments are of recent geological formation. The litho-units exposed within the river and surrounding areas have formed as water borne sediments brought by flood water during rainy season every year and deposited in riverbed.

The litho units encountered in the riverbed and surrounding areas belongs to the Shivalik super groups. The size of the sediments towards the source i.e. host rock is coarse and at the tale end of the river the grain size is reduced to smaller sizes resulted in the formation of clay beds. The following sequences have been observed in the area.

Soil/ alluvium varying in thickness from 0.20 m to 0.60 m constitute the top horizons in the area suitable for agriculture. River Ganga meanders through the area exposing the alluvium and soil at the banks. Sand is found in the river bed up to a depth of more than 3.0 m. The major part of bed remains dry as water flows in a single stream during the non-monsoon seasons. Only during rainy seasons the entire flood plain has water, when there will be no mining to be done.

### 3.4.3 MINERAL RESERVES

**TABLE 3-1: MINERAL RESERVES**

Reserve	UNFC	Quantity in Million Tonnes
Proved	111	46214145
<b>Total</b>		<b>46214145</b>

<b>Life of Mine</b>	<b>46214145/92,40,000</b>
	<b>5 Years</b>

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### 3.5 PROJECT DESCRIPTION WITH PROCESS DETAILS

#### 3.5.1 YEARWISE PRODUCTION DETAILS

In this area the river sand is exposed as surface exposures in river Ghats so it is to be explored by open cast semi-mechanized method of mining only by for me different blocks in river Ganges and its tributaries. The Applicant has proposed to produce River Sand working for a period of 5 years with a production of 9, 24,000 MTPA as per the mine plan. The details of year wise production for the five years period are given below.

**Table 3-2: Year wise Production of River Sand for the five years period**

<b>Year</b>	<b>Total quantities of Sand (Million Tonnes)</b>
<b>I</b>	9, 24,000
<b>II</b>	9, 24,000
<b>III</b>	9, 24,000
<b>IV</b>	9, 24,000
<b>V</b>	9, 24,000

#### 3.5.2 PROPOSED METHOD OF MINING:

The river sand deposited as river bed material will be exploited in its natural form by semi-mechanized open cast method.

##### 3.5.2.1 OPEN CAST MINING

The mining will be done by open- cast, semi - mechanized method of mining. Mining will be done in five stretches in each block leaving safety distance form bank and stream for river bed blocks and barrier zone of 7.5 m around the Applied Area. The river sand to be won from river ghats will be exploited and it will be simultaneously reclaimed by replenished river sand brought out during monsoon period. The river sand will be excavated by light weight excavators & it will be directly loaded into dumper/truck for dispatch to consumers of Buxar District. Water will be sprinkled in the area from where the sand is to be removed before the starts and thereafter of exploitation, at regular intervals to keep the dust suppressed at the source itself. There is no need for drilling & blasting as sand is soft.



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### 3.5.2.2 SALIENT FEATURES OF MINING METHOD

The salient features of proposed mining method are:-

1. Mining will be confined within central 3/4th width of the river. This will prevent collapse of bank and erosion.
2. It will be done leaving a safety zone of total of 1/4th of the width of the river from the banks for bank protection.
3. Excavated area will be replenished naturally due to sediment inflow from the catchment area.
4. The maximum depth of sand quarrying in the river bed shall not exceed 1 (three) meters measured from the un-mined bed level at any point of time or the water table whichever is less.

### 3.5.3 EXTENT OF MECHANIZATION

The mining machineries to be used in proposed mining operation are as below:-

**Table 3-3: List of Machineries**

S. No.	Type	No. of machine	Make
1.	JCB/Excavator	16+2*	0.9 m3 1.85 m3
2.	Dumpers/Trucks	64+4*	30 Tonne
3.	Water Tanker	4	4000 liters
4.	Bolero Jeep	1	7 Seater
5	Maintenance Van	1	--

\*Standby machinery to be used in case of any breakdown

### 3.5.4 CONCEPTUAL MINING PLAN

The River Sand is occurring throughout the area. The mineable reserves are estimated to be 46214145 MTPA. The annual Production is proposed to be 9, 24,000 MTPA. Life of the mine is 5 Years.

#### 3.5.4.1 LAND USE PATTERN

The mine lease area is flat river bed and river banks. There is no forest or agriculture land in the allotted lease area. The entire allotted lease lies within river beds of Ganga, Karamnasa, Kao, Noni & Thora river sand there will be no change in land use after operation. The river sand will be replenished every year during the monsoon season. The ultimate land use of the allotted lease area will not change.

River Sand (Minor Mineral) Mining Project for Rivers Ganga, Karamnasa, Kao, Thora, and surrounding areas of all the Balu Ghats (9,24,000 MTPA), ML Area 1141.09 ha, District- Buxar (Bihar)	<i>Pre-Feasibility Report</i>
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### 3.5.5 DRILLING & BLASTING

The river sand deposited as river bed material will be exploited in its natural form by semi- mechanized open cast method. The river sand is a loose material so no drilling & blasting is required for its mining.

### 3.6 RAW MATERIAL REQUIRMENT

No raw material will be required. The final product will be sent to consumer industries based on their demand. The mode of transportation of raw material will be road. Dumpers / Trucks will be used for transportation of River Sand (minor mineral).

### 3.7 RESOURCES OPTIMIZATION/ RECYCLING AND REUSE ENVISAGED IN THE PROJECT, IF ANY, SHOULD BE BRIEFLY OUTLINED

The river sand is a loose material so no drilling & blasting is required for its mining. There is no waste or mineral rejects generation in the proposed mining of river sand.

### 3.8 AVAILABILITY OF WATER& ITS SOURCE, ENERGY /POWER REQUIREMENT AND SOURCE OF WATER:

The daily water demand for the proposed project is 3.84 KLD. It will be procured from the nearby village. The detailed breakup of the water requirement is given below.

Error! Reference source not found. **Table 3-4: Water Demand**

S. No.	Particulars	Quantity (KLD)
1.	Domestic Purpose	0.84
2.	Dust Suppression / Water Sprinkling	1.0
3.	Green belt / Plantation	2.0
<b>Total</b>		<b>3.84</b>

**Power Supply:** All the activities will be carried out by semi mechanized method of mining. There is no power requirement for the project as excavators will run on diesel & the operation will be done only from sun rise to sun set.

### 3.9 QUANTITY OF WASTE TO BE GENERATED (LIQUID AND SOLID) AND SCHEME FOR THEIR MANAGEMENT/DISPOSAL

There is no waste or mineral rejects generation in the proposed mining of river sand, therefore, no provision of stock yard is proposed. The entire mineral produced is useable.



River Sand (Minor Mineral) Mining Project for Rivers Ganga, Karamnasa, Kao, Thora, and surrounding areas of all the Balu Ghats (9,24,000 MTPA), ML Area 1141.09 ha, District- Buxar (Bihar)	<i>Pre-Feasibility Report</i>
	<b>4.0 Site Analysis</b>

#### 4 SITE ANALYSIS

##### 4.1 CONNECTIVITY (Mine Site)

**Table 4-1: Connectivity**

PARTICULARS	DISTANCE & DIRECTION
Nearest Railway Station	Buxar Railway Station at a distance of ~3.34 km in East direction.
Nearest Airport	Jayaprakash Narayan International Airport, Patna at a distance of around ~84.37 km in SE direction.
Nearest Highway	SH-14 is ~0.37 km in South direction, SH-13 is ~0.78 km in SE direction, SH-17 is ~ 5.81 km in SE direction & NH-84 is ~0.94 km in SW direction.

##### 4.2 LAND FORM, LAND USE AND LAND OWNERSHIP

###### LAND FORM

The Mining area is flat river bed and river banks.

###### LAND USE

There is no forest or agriculture land in the allotted lease area. The entire allotted lease lies within river beds of Ganga, Karamnasa, Kao, Noni & Thora river sand there will be no change in land use after operation. The river sand will be replenished every year during the monsoon season. The ultimate land use of the allotted lease area will not change.

###### LAND OWNERSHIP

The land as per revenue records is govt. waste land of 1141.09 hectare.

##### 4.3 TOPOGRAPHY

The Mining area is flat river bed and river banks.

##### 4.4 EXISTING LAND USE PATTERN

The applied area is Government waste land. There is no reserves forest or protected forest land within the lease area.

**Table 4-2: Environmental Settings**

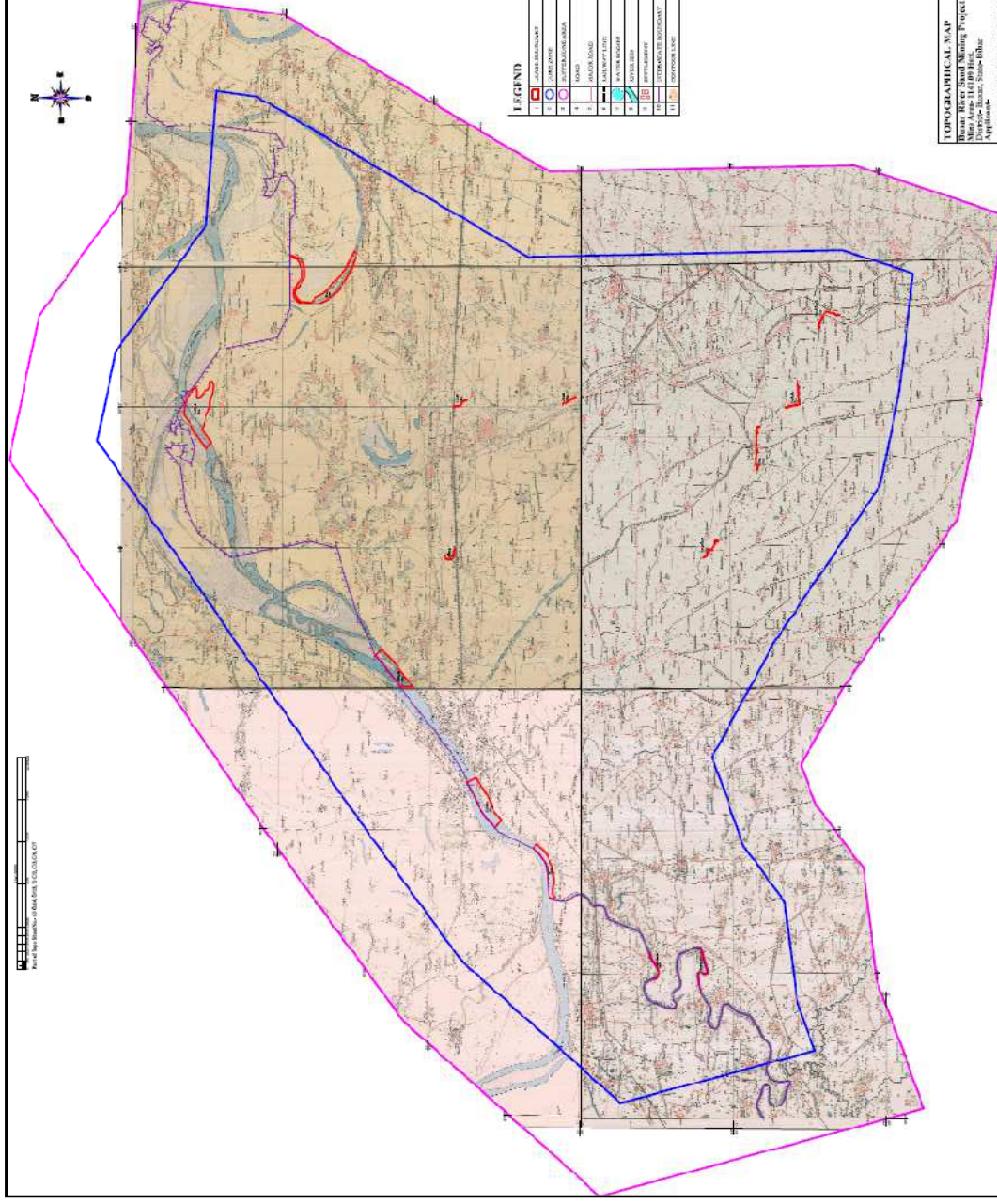
S. No.	Particulars	Details
1.	National Park, Wild Life Sanctuary, Biosphere Reserve,	No ecologically sensitive area such as National Park, Wildlife sanctuary, biospheres-reserve, mountains,

<b>River Sand (Minor Mineral) Mining Project for Rivers Ganga, Karamnasa, Kao, Thora, and surrounding areas of all the Balu Ghats (9,24,000 MTPA), ML Area 1141.09 ha, District- Buxar (Bihar)</b>	<b><i>Pre-Feasibility Report</i></b>
	<b>4.0 Site Analysis</b>

	Tiger Reserve, Wildlife Corridor, Reserved Forest	Protected & Reserved forests fall within 15 Km radius of the mining lease area.															
2.	River / water body	Available water bodies and rivers falls within 15 Km radius Buffer zone as follows: - <table border="1" data-bbox="742 414 1444 600"> <thead> <tr> <th>NAME</th> <th>DISTANCE</th> <th>DIRECTIONS</th> </tr> </thead> <tbody> <tr> <td>Ahiroli Ghat</td> <td>3.66 km</td> <td>North</td> </tr> <tr> <td>Kiratpura Ghat</td> <td>3.01 km</td> <td>SW</td> </tr> <tr> <td>Sidhipur Ghat</td> <td>10.05 km</td> <td>East</td> </tr> <tr> <td>Chausa Ghat</td> <td>8.88 km</td> <td>SW</td> </tr> </tbody> </table>	NAME	DISTANCE	DIRECTIONS	Ahiroli Ghat	3.66 km	North	Kiratpura Ghat	3.01 km	SW	Sidhipur Ghat	10.05 km	East	Chausa Ghat	8.88 km	SW
NAME	DISTANCE	DIRECTIONS															
Ahiroli Ghat	3.66 km	North															
Kiratpura Ghat	3.01 km	SW															
Sidhipur Ghat	10.05 km	East															
Chausa Ghat	8.88 km	SW															



<b>River Sand (Minor Mineral) Mining Project for Rivers Ganga, Karamnasa, Kao, Thora, and surrounding areas of all the Balu Ghats (9,24,000 MTPA), ML Area 1141.09 ha, District- Buxar (Bihar)</b>	<b>Pre-Feasibility Report</b>
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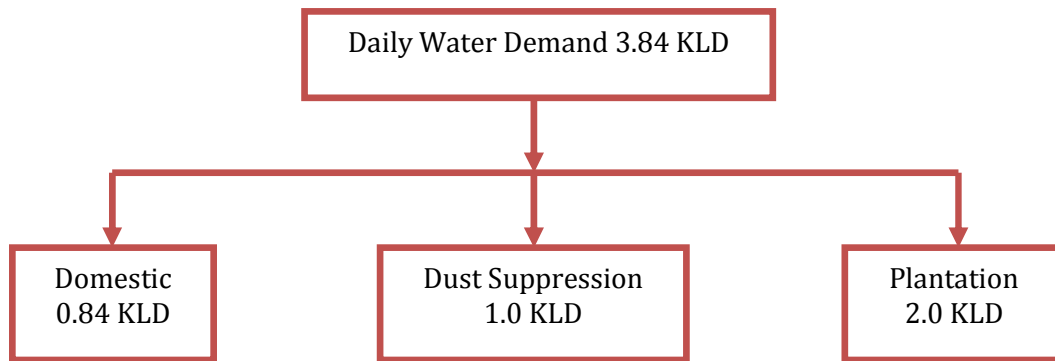
**Figure 4-1: Key Plan**  
15

#### 4.5 EXISTING INFRASTRUCTURE

Refer the para no. 4.1 of section 4.0

##### 4.5.1 WATER

The total water demand will be as follows:



##### 4.5.2 BASIC AMENITIES

- a) **School:-**The School & College facilities are available in Buxar.
- b) **Hospital:** - Hospital facilities are available in Buxar.
- c) **Other Relevant Information:** - Banking and all other essential infrastructural facilities are available at Buxar which is about 11km from Chausa.

#### 4.6 SOIL CLASSIFICATION

Soils of the district are classified as:

- Loamy sand to sandy loam
- Sandy clay loam
- Sandy clay

#### 4.7 CLIMATE

The climate in the region shows broadly four seasonal variations<sup>1</sup>, namely:

Winter: December - February

Summer: March – Mid June

Monsoon: Mid June - September

Post-monsoon: October – November

Information presented in subsequent paragraphs is from the Indian Meteorological Department (IMD), Long Term Climatological Tables, 1970-2000, Buxar. These tables give useful information about a region's weather, since they are collected over a 30-year period.

#### 4.7.1 Temperature

Mean daily maximum temperature is recorded in the month of May at Buxar is 46.4°C.

Mean daily minimum temperature is recorded in the month of February at Buxar is 3.9°C.

During the post-monsoon months of October and November mean daily maximum – mean daily minimum temperatures remain between 40.0 - 11.0°C. In winters, i.e. December, January and February, mean daily maximum – mean daily minimum temperatures remain between 35.8-3.9 °C between 32.2-6.4 °C.

#### 4.7.2 Wind

Long- term wind direction data is presented in **Table 4.3** and indicates that the predominant wind during the summer season is (March- May) is calm at daytime and wind direction is observed to be from East to West directions at evening, winter season, post monsoon, rainy

**Table 4-3: Wind Direction**

Predominant Wind Direction	First Predominant Wind Direction		Second Predominant wind Direction		Third Predominant wind Direction	
	Morning	Evening	Morning	Evening	Morning	Evening
Month						
January	Calm	Calm	SW	W	W	NW
February	Calm	W	SW	Calm	W	NW
March	SW	W	Calm	Calm	W	NW
April	E	E	Calm	NE	NE	W
May	E	E	NE	NE	Calm	Calm
June	E	E	SE	Calm	Calm	NE
July	Calm	E	E	Calm	SE	SE
August	E	E	Calm	Calm	SE	SE
September	E	Calm	Calm	E	SE	SE
October	Calm	Calm	E	E	SW	NW
November	Calm	Calm	SW	W	W	NW
December	Calm	Calm	SW	W	W	SW

#### 4.7.3 Humidity:

Most humid conditions are found in the monsoons, followed by summer, post-monsoons, and winter in that order. Mornings are more humid than evenings and humidity ranges from a high of 50-55% in monsoon mornings to a low of 35-40% in winter evenings. During post-monsoon season, in morning humidity remains between 76-68 % and in the evening it remains between 57-44%.

#### 4.7.4 Rainfall:

The total rainfall in a year is observed to be 1255.2 mm.

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	<b>4.0 Site Analysis</b>

#### 4.8 SOCIAL INFRASTRUCTURE AVAILABLE

The social infrastructure available in the study area is given in Table below.

**Table 4-4: SOCIAL INFRASTRUCTURE**

Particulars	Name	Distance (Km)	Direction
		(From Mine Area)	
Nearest Habitation	Buxar	2.99 km	East
Nearest Town	Buxar	2.99 km	East
Nearest Airport	Jay Prakash International Airport	84.37 km	SE
Nearest Highway	SH-14	~0.37	South
	SH-13	~0.78	SE
	SH-17	~5.81	SE
	NH-84	~0.94	SW
Nearest Railway Station	Buxar Railway Station	3.34 km	East

River Sand (Minor Mineral) Mining Project for Rivers Ganga, Karamnasa, Kao, Thora, and surrounding areas of all the Balu Ghats (9,24,000 MTPA), ML Area 1141.09 ha, District- Buxar (Bihar)	<i>Pre-Feasibility Report</i>
	<b>5.0 Planning Brief</b>

## 5 PLANNING BRIEF

### 5.1 PLANNING CONCEPT

Type of Industry: Mining of River Sand

Facilities: Drinking water, first aid, mine office, rest shelter

Transportation: River Sand will be transported by means of Dumpers/Trucks.

Town and Country Planning Development Authority Classification: not applicable, since this is a mining

### 5.2 PROJECT POPULATION PROJECTION

In the Buffer zone, total household is 261660. Total population is 1706352 out of which, 887977 are males and 818375 are females. The total literate person in the surrounding area is 989807 and total worker's population is 538322. The detailed demographic profile of villages located in the study area is given below:-

**Table 5-1: Demographic Profile**

S. No	NAME	No_HH	TOT_P	TOT_M	TOT_F	P_LIT	P_ILL	TOT_WORK_P	NON_WOR K_P
1.	Buxar	261660	1706352	887977	818375	989807	716545	538322	1168030

*(Source: Census Data, 2011)*

### 5.3 LAND USE PLANNING (BREAKUP ALONG WITH GREEN BELT ETC.)

The sapling for plantation will be selected on less water according to climatic condition and hence it is proposed to plant 50 saplings per year. The plantation will be done at the lease boundary and outside the lease area.

Year- wise programme of green belt development for five years, about saplings 125 will be planted in an area of 0.33 ha. Upto the conceptual phase 250 saplings will be planted. Green belt development will improve the eco-system and aesthetic beauty of the area. Post plantation cares including provision for watering, soil mulching manure supply to plants will be done. The list of the species to be planted in the green is provided below:-

**Table 5-2: Green belt Programme**

Year	Area (ha.)	No. of Saplings	Species	Place of Plantation
I	75.4	50	Sal, Bamboo,	Boundary barrier of the lease & in the lease area & Near By
II	75.4	50	Khair,	
III	75.4	50	Kasambar &	



<b>River Sand (Minor Mineral) Mining Project for Rivers Ganga, Karamnasa, Kao, Thora, and surrounding areas of all the Balu Ghats (9,24,000 MTPA), ML Area 1141.09 ha, District- Buxar (Bihar)</b>	<b>Pre-Feasibility Report</b>
	<b>5.0 Planning Brief</b>

<b>Year</b>	<b>Area (ha.)</b>	<b>No. of Saplings</b>	<b>Species</b>	<b>Place of Plantation</b>
<b>IV</b>	75.4	50	Salai	Gram-panchayat, Hospital, School etc
<b>V</b>	75.4	50		
<b>At the end of Lease period</b>	<b>377</b>	<b>250</b>		

#### **5.4 ASSESSMENT OF INFRASTRUCTURE DEMAND (PHYSICAL AND SOCIAL)**

The mine area is easily accessible from the state highway by SH-14 is ~0.37 km in South direction, SH-13 is ~ 0.78 km in SE direction & NH-84 is ~0.94 km in SW direction from the mine site will be helpful to approach workers to the mine site as well as transportation of mineral to the nearby areas and end user. Buxar Railway station (B.G.) is ~3.34 Km in East direction. The infrastructure demand in the villages will be evaluate on the basis of necessity and priority. Job opportunities are inadequate and new possibility for income generation is required.

#### **5.5 AMENITIES/FACILITIES**

- **Mine Office:** It is proposed to have a temporary mine office with First Aid Facility.
- **Rest Shelter:** Temporary Rest Shelter will be made available.
- **Drinking Water Facility:** The drinking water will be made available from the nearby open well as well as from the water tankers. It will be stored in earthen pots and tanks at the site. The quality of water is reportedly potable.
- **Toilets:** The toilet facility is proposed for the better sanitary condition of the workers employed in Mining area.
- Other facilities will be developed as per requirement of the local people of the nearby area under corporate social responsibilities programs.



<b>River Sand (Minor Mineral) Mining Project for Rivers Ganga, Karamnasa, Kao, Thora, and surrounding areas of all the Balu Ghats (9,24,000 MTPA), ML Area 1141.09 ha, District- Buxar (Bihar)</b>	<i>Pre-Feasibility Report</i>
	<b>6.0 Proposed Infrastructure</b>

## **6 PROPOSED INFRASTRUCTURE**

### **6.1 INDUSTRIAL AREA (PROCESSING AREA)**

The area is well connected by road network to the proposed mine sites, District headquarter etc. The area is self-sufficient to supply the needs of the project. Hence no, infrastructure is proposed.

### **6.2 RESIDENTIAL AREA (NON PROCESSING AREA)**

The local people will be employed, hence no residential area/ housing is proposed.

### **6.3 GREEN BELT**

Refer point no. 5.3.

### **6.4 SOCIAL INFRASTRUCTURE**

The proposed project is situated in District – Buxar (Bihar). As local people will be employed for excavation activities, no permanent infrastructure is required. The workers will come to the site by company's vehicle. By this project, indirect means of earnings in the area will be developed, which will bring a positive impact on the adjacent habitation.

### **6.5 CONNECTIVITY**

Given in Para No. 4.0.

### **6.6 DRINKING WATER MANAGEMENT (SOURCE & SUPPLY OF WATER)**

The total water requirement for the proposed activity is 3.84 KLD out of which 3.65 KLD will be met from the nearby village pond (desolation and impoundment will be carried out by P.P.). On one hand this will recharge the ground water table on the other will act as a water source nearby habitants. Only water for drinking purposes i.e. 0.19 KLD will be brought from nearby dug well/PHED. However, rain water stored in the pit during the rainy season will be used for plantation and dust suppression. The proposed indigenous water source created by the project proponent will fulfill the water demand of local habitants.

### **6.7 SEWAGE SYSTEM**

Not applicable.

### **6.8 INDUSTRIAL WASTE MANAGEMENT**

No industrial waste will be generated.

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	<b>6.0 Proposed Infrastructure</b>

**6.9 SOLID WASTE MANAGEMENT**

Given in point no. 3.9

**6.10 POWER REQUIREMENT & SUPPLY/SOURCE**

For the proposed mining activity no power is required.



<b>River Sand (Minor Mineral) Mining Project for Rivers Ganga, Karamnasa, Kao, Thora, and surrounding areas of all the Balu Ghats (9,24,000 MTPA), ML Area 1141.09 ha, District- Buxar (Bihar)</b>	<i>Pre-Feasibility Report</i>		
	<b>7.0</b>	<b>Rehabilitation</b>	<b>And Resettlement (R &amp; R Plan)</b>

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

### **7.1 POLICY TO BE ADOPTED**

No rehabilitation and resettlement is either required or proposed for the project as mining will be carried out entirely on Government Waste Land.



River Sand (Minor Mineral) Mining Project for Rivers Ganga, Karamnasa, Kao, Thora, and surrounding areas of all the Balu Ghats (9,24,000 MTPA), ML Area 1141.09 ha, District- Buxar (Bihar)	<i>Pre-Feasibility Report</i>
	<b>8.0 Project Schedule and Cost Estimates</b>

## **8 PROJECT SCHEDULE AND COST ESTIMATES**

### **8.1 LIKELY DATE OF START OF CONSTRUCTION AND LIKELY DATE OF COMPLETION (TIME SCHEDULE FOR THE PROJECT WILL BE GIVEN).**

Mining will commence only after obtaining necessary clearance from Central and State Government.

### **8.2 ESTIMATED PROJECT COST**

#### **Project cost**

The proposed project cost will be Rs. 600Lac/Annum

Capital Cost: Rs. 500 Lac/Annum

Recurring Cost: Rs. 350 Lac/Annum



<b>River Sand (Minor Mineral) Mining Project for Rivers Ganga, Karamnasa, Kao, Thora, and surrounding areas of all the Balu Ghats (9,24,000 MTPA), ML Area 1141.09 ha, District- Buxar (Bihar)</b>	<i>Pre-Feasibility Report</i>
	<b>9.0 Analysis of Proposal</b>

## 9 ANALYSIS OF PROPOSAL

Proposed River Sand (minor mineral) mining project will result in growth of the surrounding areas. Direct and indirect employment will be created in nearby village. Special emphasis on Financial and Social benefits will be given to the local people. No major adverse effect on environment is envisaged as the required mitigation measures are inbuilt in the project.



River Sand (Minor Mineral) Mining Project for Rivers Ganga, Karamnasa, Kao, Thora, and surrounding areas of all the Balu Ghats (9,24,000 MTPA), ML Area 1141.09 ha, District- Buxar (Bihar)	<i>Pre-Feasibility Report</i>
	<b>10.0 Environment Management Plan</b>

## 10 ENVIRONMENT MANAGEMENT PLAN

**Table 10-1: ENVIRONMENT MANAGEMENT PLAN**

PARTICULARS		MANAGEMENT
Air Quality	Excavation, Loading and Transportation	<ul style="list-style-type: none"> <li>➤ Dust generated due to vehicular movements will be suppressed by water spraying on haul road.</li> <li>➤ Dust mask will be provided to the workers.</li> <li>➤ Proper maintenance of vehicles &amp; machineries will be done.</li> <li>➤ Speed of the vehicles will be kept within the prescribed limits.</li> <li>➤ Dumpers will not be over loaded.</li> </ul>
Water Quality		<ul style="list-style-type: none"> <li>➤ Sewage will be generated by employing maximum workers in the mine which will be diverted into a septic tank followed by soak pit.</li> <li>➤ Mining operations will be at higher levels; therefore there will be no effect on ground water condition due to mining.</li> </ul>
Noise Quality		<ul style="list-style-type: none"> <li>➤ Adequate silencers in all the diesel operated vehicles will be used.</li> <li>➤ Personnel protective equipment will be provided to the workers/employed persons.</li> <li>➤ Proper maintenance of machines at regular intervals will be done.</li> <li>➤ Green belt development and plantation.</li> </ul>
Solid Waste		<ul style="list-style-type: none"> <li>➤ There is no waste or mineral rejects generation in the proposed mining of river sand.</li> <li>➤ Small amount of domestic waste will be generated for which dustbin will be kept at proper place and it will be disposed properly and regularly.</li> </ul>
Land Reclamation		The allotted area is flat river bed and river banks. There is no forest land or agricultural land in the allotted area.

## जिला खनन कार्यालय, बक्सर

पत्रांक.....211.....खनन/बक्सर, दिनांक.....12/.....9...../2015

प्रेषक,

समाहर्ता  
बक्सर।

प्रेषित,

सर्वश्री कल्यायनी कॉन्ट्रैक्टर्स प्रा० लि०  
निदेशक—अशोक कुमार  
पिता—स्व० रामचन्द्र साह  
144—परेव, बिहटा—802160  
पटना।

विषय :- बक्सर जिलान्तर्गत सम्पूर्ण बालूघाटों का पंचाग वर्ष 2015 से अगले पाँच वर्षों दिनांक 01.01.2015 से 31.12.2019 तक के लिए बन्दोबस्ती की सैद्धांतिक स्वीकृति के संबंध में।

उपर्युक्त विषय से संबंधित विभागीय अधिसूचना सं०—2214/एम, पटना, दिनांक 27.08.2013, 2887/एम पटना, दिनांक 22.07.2014 एवं निविदा पत्र में यथा निहित प्रावधानों दिनांक 04.08.2015 को सम्पन्न नीलामी में आपको उच्चतम डाकवक्ता घोषित किये जाने के आलोक में आपके पक्ष में बक्सर जिलान्तर्गत सम्पूर्ण बालूघाटों का पंचाग वर्ष 2015 से अगले पाँच वर्षों दिनांक 12.08.2015 से 31.12.2019 तक के लिए बंदोबस्ती की सैद्धांतिक स्वीकृति प्रदान की जाती है, जिसका विवरण/शर्त एवं बंधेज निम्नवत है :-

1. खनिज का नाम :- साधारण बालू, बालूघाटों में यथा उपलब्ध
  2. क्षेत्र का विवरण :- बक्सर जिला में अवस्थित सभी बालूघाटों का सम्पूर्ण क्षेत्र।
  3. बन्दोबस्ती की अवधि एवं बन्दोबस्ती छोड़ने की शर्त :-
    - (i). बालूघाटों की बन्दोबस्ती दिनांक 12.08.2015 से 31.12.2019 तक के लिए मान्य। बोली गई उच्चतम डाक राशि प्रथम वर्ष के लिए बन्दोबस्ती राशि मानी जायेगी। द्वितीय वर्ष तथा उसके आगे के वर्षों की बन्दोबस्ती राशि उक्त वर्ष के पूर्व की बन्दोबस्ती राशि के 120 प्रतिशत के समतुल्य होगी।
    - (ii). किसी भी परिस्थिति में उक्त अवधि में बन्दोबस्ती नहीं छोड़ी जा सकती है और छोड़े जाने की स्थिति में उक्त अवधि की बन्दोबस्ती की पूर्ण राशि वसूलनीय होगी।
  4. पंचाग वर्ष 2015 के लिए :-

स्वीकृत बन्दोबस्त राशि :- 23,11000.00 ( तेईस लाख गयारह हजार रुपये )
  - 5- प्रतिभूति राशि :- 5,77,750.00 ( पाँच लाख सत्तहतर हजार सात सौ पचास रुपया)
- प्रतिभूति राशि का समायोजन बन्दोबस्ती के अंतिम वर्ष के अंतिम किस्त के साथ किया जा सकेगा, शर्तों के बन्दोबस्तधारी पर किसी प्रकार का बकाया नहीं हो।



6. बन्दोबस्ती राशि भुगतान की प्रक्रिया :-

किस्त	भुगतान की निर्धारित तिथि
प्रथम किस्त (50 प्रतिशत)	(क) कार्यादेश निर्गत के पूर्व (प्रथम वर्ष हेतु) (ख) 15 दिसम्बर (द्वितीय वर्ष तथा उसके पश्चात)
द्वितीय किस्त (25 प्रतिशत)	15 अप्रैल
तृतीय किस्त (25 प्रतिशत)	15 सितम्बर

7. वाणिज्यकर एवं VAT का भुगतान :- बंदोबस्तधारी को बन्दोबस्ती राशि की पाँच प्रतिशत राशि वाणिज्यकर / VAT के विरुद्ध अग्रिम रूप में 3 किस्तों में भुगतान करना होगा। खनन कार्यालय में वाणिज्यकर भुगतान का प्रमाण प्रत्येक किस्त के साथ देना होगा।
8. आयकर का भुगतान :- बंदोबस्तधारी को बन्दोबस्ती राशि के प्रत्येक किस्त के साथ 2 प्रतिशत आयकर एवं उसपर देय अधिभार का भुगतान करना होगा।
9. बालू खनन क्षेत्रों के पुनरुद्धार एवं पुर्नवास :- बंदोबस्तधारी को बंदोबस्ती राशि का 2 प्रतिशत राशि बालू खनन क्षेत्रों के पुनरुद्धार एवं पुर्नवास हेतु पृथक कोष के रूप में जिला पदाधिकारी, बक्सर के पदनाम से भुगतये बैंक ड्राफ्ट के माध्यम से कार्यादेश निर्गत समिति द्वारा किया जायेगा।
10. (क) खनन योजना (Mining Plan):- सफल डाकवक्ता को नई बालू नीति से संबंधित अधिसूचना सं0-2214/एम0, दिनांक 27.08.2013 की कंडिका 5(क) का अनुपालन सुनिश्चित करते हुए खनन योजना (Mining Plan) को सरकार से अनुमोदित कराने के संबंध में विभागीय अधिसूचना सं0-815/एम0 पटना, दिनांक 25.02.2014 में वर्णित प्रावधनों के तहत निर्धारित अवधि तक समर्पित करना होगा।  
(ख) पर्यावरण स्वच्छता प्रमाण-पत्र (Environmental Clearance) :- सफल डाकवक्ता को नई बालू नीति से संबंधित अधिसूचना सं0-2214/एम0, पटना, दिनांक 27.08.2013 की कंडिका 6(क) (ख) एवं (ग) का अनुपालन सुनिश्चित करते हुए सक्षम प्राधिकार से पर्यावरण स्वच्छता प्रमाण-पत्र निर्धारित अवधि तक समर्पित करना होगा।
11. बन्दोबस्ती का एकरनामा :- बन्दोबस्तधारी को 60 दिनों के अन्दर बन्दोबस्ती का एकरनामा विहित प्रपत्र में समाहर्ता महोदय से निष्पादित एकरनामा का निबंधन कराकर दाखिल करना होगा।
12. अतिरिक्त स्वामिस्व का भुगतान :- बंदोबस्तधारी द्वारा किसी एक वर्ष में निष्कासित बालू की मात्रा पर देय स्वामिस्व की राशि उक्त वर्ष की बंदोबस्ती राशि से अधिक होने पर बंदोबस्तधारी को अतिरिक्त स्वामिस्व का भुगतान करना होगा।
13. बालू खनन की अधिकतम गहराई :- नदी तल से खनन की अधिकतम गहराई उचित बेंच रचना के साथ किसी समय उक्त बिन्दु पर अखनित तल स्तर से तीन मीटर अथवा निम्नतम जल स्तर में जो कम हो, से अधिक नहीं होगी।
14. बालू के उत्खनन के प्रतिबंधित क्षेत्र :-  
(क) रेलवे पुल एवं राज्य / राष्ट्रीय उच्च पथ के अन्तर्गत पुल से 300 मी० तथा सामान्य पुल से 100 मी० दोनों तरफ के क्षेत्र।



- (ख) कोईलवर रेलवे पुल की सुरक्षा हेतु उक्त पुल के दक्षिण और 600 मीटर तथा उत्तर की ओर 300 मीटर क्षेत्र।
- (ग) किसी भी सार्वजनिक स्थल यथा श्मशानघाट/धार्मिक स्थल आदि से 50 मीटर दूरी का क्षेत्र।
- (घ) नदी के दोनो किनारों से 5 मीटर का क्षेत्र छोड़कर ही बालू का खनन कार्य किया जायेगा।
- (ङ) डैम/वीयर/सिंचाई हेतु नियम अन्य Structure से Upstream and Downstream की ओर से 100 मीटर का क्षेत्र बालू का खनन हेतु प्रतिबंधित है।
- (च) बाढ़ नियंत्रण तटबंधो से 46 मीटर दूरी तका का क्षेत्र। 46 मीटर से 61 मीटर तक का क्षेत्र में 1.80 मीटर गहराई तक तथा 61 मीटर से 91 मीटर की दूरी तक के क्षेत्र में 2.40 मीटर तक की गहराई तक खनन अनुमान्य होगा।
- (छ) सिंचाई हेतु निर्मित आउटलेट के स्तर को रिभर बेड के स्तर के बराबर रखना होगा यानि रिभर बेड का स्तर आउटलेट के स्तर से नीचे नहीं होगा।
- (ज) इनफिलट्रेशन बेल/इनटेक बेल के चारों ओर बालू उत्खनन नहीं किया जायेगा। जिन नदियों से सिंचाई हेतु पाईन निःसृत है, उस क्षेत्र में स्थानीय जल संसाधन विभाग के अभियंता से अनापति प्रमाण-पत्र कर बालू का उत्खनन किया जायेगा। ताकि पईन सिंचाई प्रणाली प्रभावीत नहीं हो।

15- बन्दोबस्तधारी द्वारा नियमों /अनुदेशों /शर्तों का अनुपालन :- बालूघाट बन्दोबस्तधारी को विभागीय अधिसूचना सं०-2214/एम०, पटना, दिनांक 27.07.2015 अधिसूचना सं०- 2087/एम०, पटना, दिनांक 22.07.2014 निविदादस्तावेज में वर्णित नई बालू नीति के तहत सभी नियमों एवं शर्तों तथा खान एवं खनिज (विकास एवं विनियमन) अधिनियम,1957, बिहार लघु खनिज समनुदान नियमावली, 1972 बिहार खनिज (अवैध खनन, परिवहन, एवं भण्डारण निवारण) नियमावली, 2003, बिहार लघु खनिज समनुदान नियमावली, 1972 बिहार खनिज (अवैध खनन, परिवहन, एवं भण्डारण निवारण) नियमावली, 2003, बिहार लघु खनिज समनुदान संशोधन नियमावली, 2014, भारतीय खान ब्यूरो द्वारा प्रस्तावित लघु खनिज संरक्षण एवं विकास नियमावली, 2010 के सुसंगत प्रावधानों एवं संशोधनो, सरकार द्वारा समय-समय पर निर्गत अनुदेशो तथ इसके अतिरिक्त अन्य सभी सुसंगत अधिनियम /नियमावली के प्रावधानों का अनिवार्य रुप से अनुपालन करना होगा।



12.8.15  
समाहता  
बक्सर।

**DESCRIPTION OF EACH GHATS PILLAR IN THE AREA: -**

<b>GHAT CODE</b>	<b>DISTRICT</b>	<b>NAME OF RIVER</b>	<b>NAME OF THE GHAT</b>	<b>LATITUDE (N)</b>	<b>LONGITUDE (E)</b>	<b>AREA IN (Ha.)</b>
BUXT-1	BUXAR	THORA	SIKRAUL	25°24'01.53"	84°07'18.70"	10.35
				25°24'00.78"	84°07'18.66"	
				25°24'01.84"	84°09'00.19"	
				25°24'02.22"	84°09'01.59"	
BUXK-2	BUXAR	KARAMNASA	ROHINIBHAN (DIHARI)	25°26'09.54"	83°49'33.87"	14.59
				25°26'08.60"	83°49'33.28"	
				25°26'06.37"	83°50'48.32"	
				25°26'07.85"	83°50'47.61"	
BUX -3	BUXAR		BAIKUNTH PUR	25°25'48.30"	84°04'30.83"	6.27
				25°25'47.71"	84°04'29.91"	
				25°25'41.32"	84°04'45.45"	
				25°25'40.73"	84°04'46.37"	
BUXK-4	BUXAR	KAU	AMSARI (DUMRAO)	25°30'25.90"	84°10'04.20"	2.59
				25°30'04.88"	84°10'15.84"	
BUX -5	BUXAR		AATHAR	25°26'18.53"	84°11'1.98"	5.0
				25°28'2.30"	84°11'29.67"	
BUX -6	BUXAR		SHIGHNPURA IKAUNA			0.40
BUX -7	BUXAR		NIYAZIPUR	25°43'01.40"	84°06'44.43"	373.32
				25°42'46.95"	84°06'52.77"	
				25°42'40.93"	84°08'14.25"	
				25°43'08.07"	84°09'31.63"	

BUX -8	BUXAR		MANHATHA	25°23'02.11"	84°09'47.77"	7.76
				25°23'01.98"	84°09'46.64"	
				25°22'40.90"	84°10'19.76"	
				25°22'42.06"	84°10'19.68"	
BUX -9	BUXAR		SIDHIPUR	25°34'26.14"	84°04'26.57"	2.60
				25°34'10.47"	84°04'48.36"	
BUX -10	BUXAR		LEWAR	25°34'48.44"	84°10'01.60"	2.05
				25°34'28.68"	84°09'57.53"	
BUXK-11	BUXAR	KAU	PANCHDHARWA (RUPSAGAR)	25°21'59.05"	84°12'20.90"	6.99
				25°21'58.22"	84°12'21.80"	
				25°21'23.01"	84°12'56.80"	
				25°21'22.98"	84°12'58.28"	
BUX -12	BUXAR		CHAKKI	25°39'41.71"	84°15'05.49"	208.87
				25°39'40.99"	84°15'09.46"	
				25°37'40.05"	84°15'16.98"	
				25°37'32.96"	84°15'12.98"	
BUXG-13	BUXAR	GANGA	RAMJIYAWAN GANJ (KRITPURA)	25°33'46.22"	83°56'48.49"	203.58
				25°33'35.48"	83°56'54.38"	
				25°32'41.42"	83°54'56.46"	
				25°32'31.24"	83°55'03.96"	
BUXG-14	BUXAR	GANGA	NARBATPUR, SONPA (CHAUSA)	25°31'23.06"	83°54'08.83"	115.53
				25°31'17.35"	83°54'11.99"	
				25°31'02.09"	83°52'38.82"	
				25°30'53.67"	83°52'36.11"	
BUXG-15	BUXAR	GANGA	AHIRALI	25°35'43.28"	83°59'36.01"	169.37
				25°35'35.53"	83°59'44.12"	
				25°36'23.50"	84°01'05.39"	

				25 <sup>0</sup> 36'37.67"	84 <sup>0</sup> 00'53.15"	
BUXK-16	BUXAR	KARAMNASA	KARAMNASA	25 <sup>0</sup> 27'39.23"	83 <sup>0</sup> 50'18.95"	11.82
			(RED SOIL)	25 <sup>0</sup> 27'38.34"	83 <sup>0</sup> 50'19.38"	
				25 <sup>0</sup> 27'35.59"	83 <sup>0</sup> 49'44.50"	
				25 <sup>0</sup> 27'36.38"	83 <sup>0</sup> 49'46.08"	
<b>Total</b>						<b>1141.09</b>