

# **EXECUTIVE SUMMARY**

(English)

*for the proposed*

**MINOR MINERAL (RIVER BED MATERIAL) Project**

**at**

**Block No.: - 1, Hadbast No.: - 358**

**Area- 22.47 ha.,**

**At River Sutlej, Near Village- Mehain,**

**Tehsil: - Anandpur Sahib,**

**District: - Ropar, Punjab**

**Production Capacity – 3,31,537 MT/annum**

**Forest land- Nil**

**Study Period: -Winter Season (December 2020 to February 2021)**

*Submitted to*

**Member Secretary J&K Pollution Control Board, Jammu**

*Submitted by*

**SHRI RAKESH KUMAR CHOUDHARY**

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## **1.0 INTRODUCTION**

### **1.1 Purpose of the Report**

Environmental Impact Assessment (EIA) is a decision-making tool, in the hands of the Authorities which brings forth the factual position about a project that enables them in arriving at an appropriate conclusion for the proposed projects, to retain them if environmentally sound, and reject if found having deleterious overall impact. EIA identifies the extent of the environmental, social and economic impacts of a project prior to decision making. EIA systematically examines both beneficial and adverse impacts of the proposed project over and above the prevailing conditions of environmental parameters and ensure that these impacts are taken into account during the project designing stage itself and the values of the combined impacts are never allowed to exceed and remain within the statutory norms. This process has been envisioned and set in motion by the Ministry of Environment, Forests and Climate Change (MoEF & CC) for sustainable development and the final decision is arrived at only when those who matter are made known of the salient features of the project being envisaged close to them and their opinion has been sought in a widely advertised Public Hearing Event under the chairmanship of the district authorities so that public could also express their opinion freely.

This Draft Environmental Impact Assessment report is being prepared and submitted to pollution control board to comply with the Terms of Reference (TOR) mining project was submitted on 3/2/2021. The project was presented for TOR before the SEAC, Punjab in meeting agenda item No 174.22 on Dt. 10 April 2020. under EIA notification, 2006 dated 14-9-2006, as amended on 1st Dec 2009 & 4th April 2011, 13th December 2012, 13th March 2013, 9th September 2013 of MoEF & CC, Govt. of India, for seeking environmental clearance for river bed material mining in the applied mining lease area measuring 22.47 hectares falling under Category “B1” project.

### **1.2 Brief Description of the Project**

#### **1.2.1 Nature of the Project**

As per EIA notification September 14<sup>th</sup>, 2006 and its amendments all the mining project requires prior environmental clearance. Sanctioned Mining Lease Area (MLA) is 22.47 ha. so, it falls under “Category B1” based on the Schedule

Clause no 1(a) of EIA notification and its corresponding amendments till date and requires environmental clearance from SEAC.

Since there are no reserve forests, protected forest, critically polluted areas, notified eco-sensitive area, interstate boundaries falling in whole or in part with in 10 km radius of the proposed project, general conditions are not applicable.

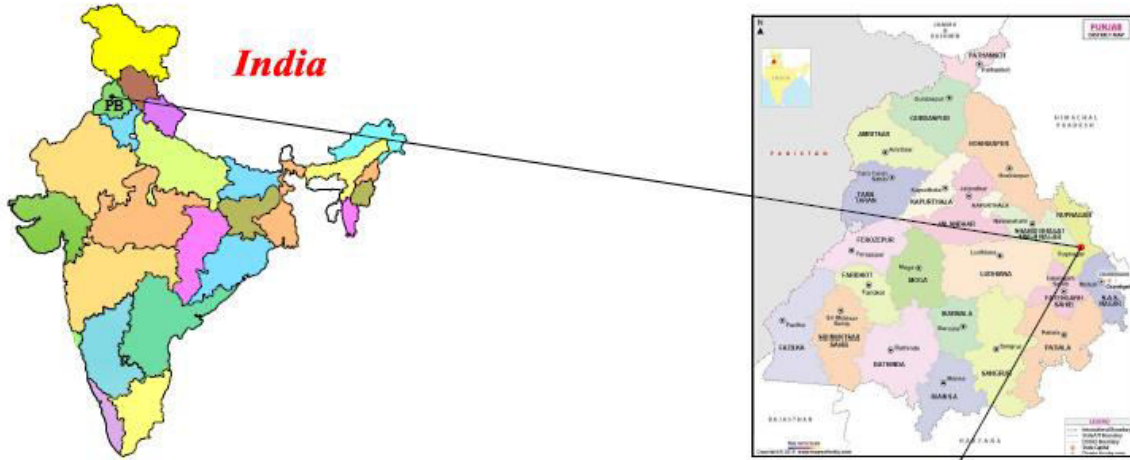
### **1.2.2 Size of the Project**

The proposed project of opencast river bed mining of sand from river bed of River Sutlej, Near Village- Mehain, Tehsil: - Anandpur Sahib, District: Ropar (Rupnagar), Punjab has got sanctioned mining lease area of 22.47 ha.

### **1.2.3 Location of the Project**


The proposed project is located at Block No. 1, Sanctioned ML Area – 22.47 ha, located at River Sutlej, Near Village- Mehain, Tehsil: - Anandpur Sahib, District: Ropar (Rupnagar), Punjab. The location map of the project site is presented in Figure 1, Study Area Map (10 km Radius) presented in Figure 2. Details of project location and its surrounding features are presented in Table 1.

## Location Map



MAP NOT TO SCALE

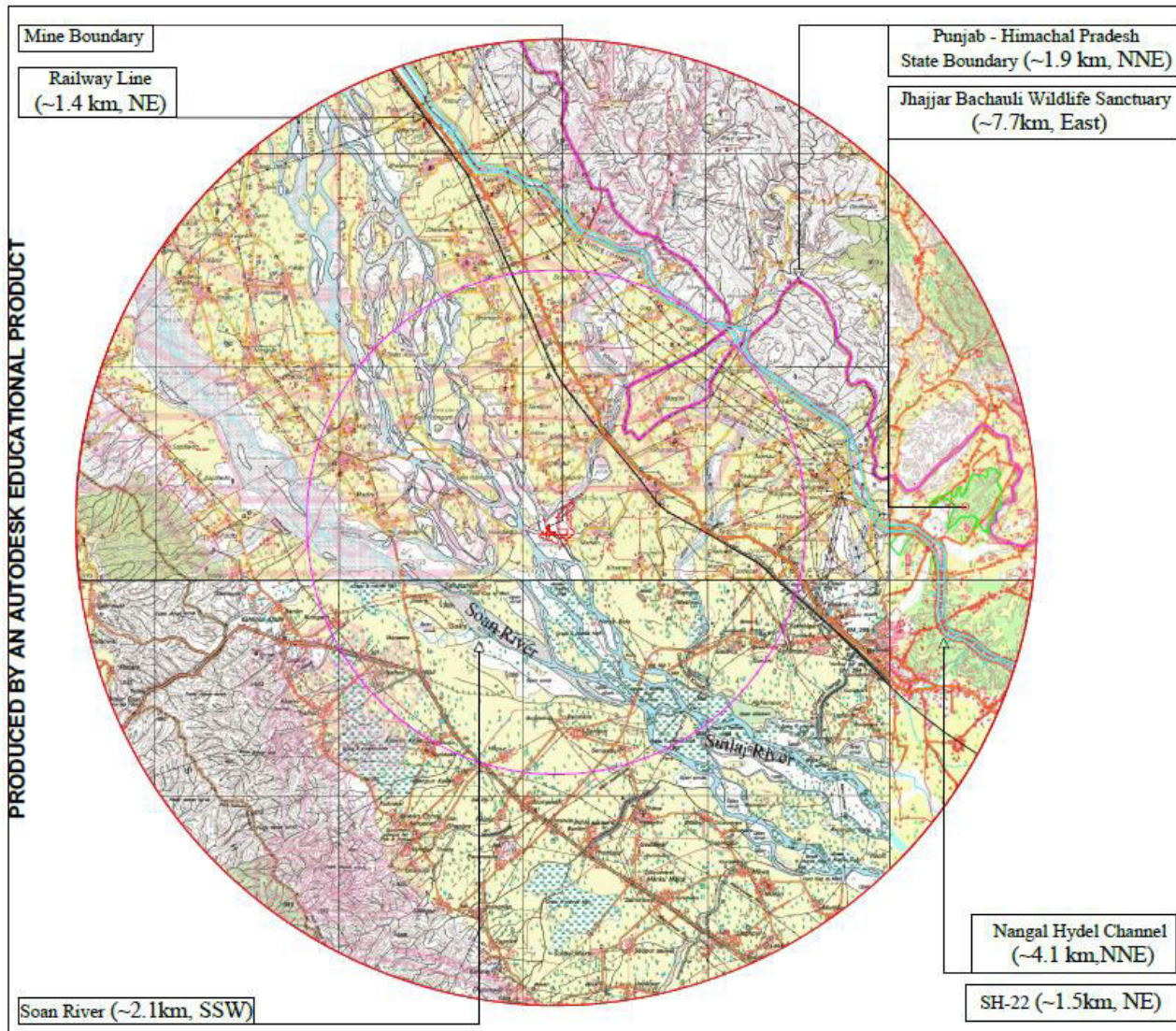
### *LEGEND*

S.NO.	PARTICULARS	REF.
1.	MINE AREA	

### LOCATION MAP

Applicant - Shri Rakesh Kumar Choudhary  
 Block No. - 1, Hadbast No. -358  
 Near Village - Mehain, Name of River - Sutlej River  
 Mineral -River Bed Material [Gravel(Minor Mineral)]  
 Lease Area -22.47Ha. (Non- Forest)  
 District- Ropar (Rupnagar), State- Punjab  
 Khasra No.-. 14//3, 14//4, 14//8, 14//13, 14//14, 14//17, 14//18,  
 15//5/1, 15//5/2, 15//19, 15//22, 16//6, 16//15, 17//2/2, 17//7, 17//11,  
 17//13, 17//14, 17//15, 17//16, 17//17, 17//18, 17//19, 17//20, 17//24,  
 17//25, 18//5, 18//6, 18//7, 18//18, 18//12, 18//13, 18//14

**Figure 1: Location of the proposed project site.**



LEGEND		
1		Mine Boundary
2		10 Km Boundary
3		5 Km Boundary

TOPO SHEET NO.	
53A/7	53A/11
53A/8	53A/12

Express highway: with toll; with bridge; with distance stone	
Roads, metalled: according to importance	
Roads, double carriageway: according to importance	
Unmetalled road, Cart-track, Pack-track with pass, Foot-path	
Streams: with track in bed, underlined, Canal	
Dam: masonry or rock-filled; weirwork, Weir	
River: dry with water channel; with island & rocks, Tidal river	
Submerged rocks, Shoal, Swamp, Roads	
Well: open; unroofed, Tube-well, Spring, Tanka; permanent dry	
Embankment: roof or rail; bank, Broken ground	
Railways, broad gauge: double; single with station; under canopy	
Railways, other gauges: double; single with distance stone; do	
Mineral line or tramway, Kfm, Cutting with tunnel	
Contours with sub-systems, Rocky slopes, Cliffs	
Sand features: (flat/2) sand-hills (permanent), (D) dunes (shifting)	
Towns or Villages: inhabited; deserted; Fort	
Huts: permanent; temporary, Tower, Antiquities	
Temple, Chhatra, Mosque, Mazar, Light, Tomb, Graves	
Lighthouse, Lightship, Buoy: lighted; unlighted, Anchorage	
Mine: Vite on tracks, Grass, Scrub	
Palms: pathway; silt; Plantain, Coriander, Bamboo, Other trees	
Areas: cultivated; wooded; Surveyed tree	
Boundary, International	
State: demarcated; under-recoated	
District: subdivision, Sahel or DM; forest	

MAP SHOWING 10 K.M. RADIUS STUDY AREA

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 17//25, 18//5, 18//6, 18//7, 18//18, 18//12, 18//13, 18//14

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Figure 2: 10 KM Study area map showing the proposed project site

### 1.3 Size/Magnitude of Operation

The salient features of the proposed opencast river bed mining project are given in Table 2.

**Table 2:** Salient features of the mining project

S. No	Information	Details			
1.	Project Name	“Minor Mineral (River Bed Material)” at Block No. 1 River Sutlej, Village- Mehain, Tehsil: - Anandpur Sahib, District: Ropar (Rupnagar), Punjab			
2.	Project Proponent	Shri Rakesh Kumar Choudhary			
3.	Project Coordinates	SN	Pillar	Latitude	Longitude
		1	A	31°15' 56.0035"	76°25' 39.6377"
		2	B	31°15' 53.343"	76°25' 42.4297"
		3	C	31°15' 46.514"	76°25' 34.721"
		4	D	31°15' 46.4592"	76°25' 39.664"
		5	E	31°15' 44.4994"	76°25' 39.6345"
		6	F	31°15' 44.5262"	76°25' 37.2264"
		7	G	31°15' 42.5665"	76°25' 37.1969"
		8	H	31°15' 42.5397"	76°25' 39.6049"
		9	I	31°15' 36.631"	76°25' 42.178"
		10	J	31°15' 32.9294"	76°25' 42.1222"
		11	K	31°15' 32.9575"	76°25' 39.5874"
		12	L	31°15' 30.7801"	76°25' 39.5547"
		13	M	31°15' 30.8082"	76°25' 37.0199"
		14	N	31°15' 28.8485"	76°25' 36.9904"
		15	O	31°15' 28.8767"	76°25' 34.4557"
		16	P	31°15' 30.8364"	76°25' 34.4852"
		17	Q	31°15' 30.8926"	76°25' 29.4157"
		18	R	31°15' 26.9732"	76°25' 29.3568"
		19	S	31°15' 31.4838"	76°25' 13.381"
		20	T	31°15' 35.3334"	76°25' 16.8064"
		21	U	31°15' 32.9927"	76°25' 16.7713"
		22	V	31°15' 32.7293"	76°25' 37.0488"
		23	W	31°15' 32.8302"	76°25' 37.0503"
		24	X	31°15' 32.8274"	76°25' 36.212"
		25	Y	31°15' 36.6874"	76°25' 37.1084"

		26	Z	31°15' 36.7717"	76°25' 29.504"
		27	A'	31°15' 44.6106"	76°25' 29.6218"
		28	B'	31°15' 44.6387"	76°25' 27.087"
		Block-2			
		1	A	31°15' 40.4256"	76°25' 21.9532"
		2	B	31°15' 34.982"	76°25' 21.8715"
		3	C	31°15' 34.9258"	76°25' 26.9411"
		4	D	31°15' 33.0398"	76°25' 26.9128"
		5	E	31°15' 33.0855"	76°25' 19.3079"
		6	F	31°15' 36.9697"	76°25' 19.3662"
		7	G	31°15' 38.2218"	76°25' 19.3849"
4.	Toposheet No.	53 A/7			
5.	Altitude of the Area	Highest elevation: - 273.537 mRL. Lowest elevation: - 269.2146 mRL.			
6.	Location	Block No. 1, River Sutlej in Village: Mahein, Tehsil: Anandpur Sahib, District: Ropar (Rupnagar), State- Punjab			
	Lease Hold Area	Area: 22.47 Ha.			
	Village	Mahein			
	Tehsil	Anandpur Sahib			
	District	Ropar (Rupnagar)			
	State	Punjab			
7.	Lease Status	The applicants being the highest bidder was issued with Letter of Intent (LOI) by DGM office vide letter No. 811-813/ DMG /E-Auction/2019 dated 31.07.2019. of Prevention of the Punjab Minor Mineral Concession Storage, Transportation of Minerals and illegal Mining Rules, 2016.			
8.	Topography of Mine lease area	Non-arable, non-forested land of river bed.			
9.	Name of the Mineral Mining	River Bed Mineral			
10.	Mode of Mining	Open Cast, Semi-mechanized			
11.	Total Geological Reserve	3,93,927 MT			
12.	Total Mineable Reserve (MT)	3,31,537 MT			
13.	Production Capacity (TPA)	3,31,537 TPA			

14.	Life of mine	There is as such no specific life of the mine as the area under reference is open and barrel bed of the river and whatever quantity of minor minerals are extracted from the lease area during one year almost equal to extracted quantity of the same are replenished every year in the lease area by the river itself on account of its flow and velocity so the voids created gets filled up on their own.
15.	Drilling/ Blasting	No
16.	Man Power Used	90
17.	Land utilization Pattern	100% wasteland earmarked for the River Bed Material mining by the Govt. of Punjab
18.	Project Cost	Rs. 4.00 Crore
19.	CER Expenditure	Capital cost – ₹ 5.0 lac Recurring cost – ₹ 8.0 lac
20.	Water requirements and source	<b>Water Requirement:</b> 9.58 KLD of water will be used for the project site (Dust Suppression, Drinking and Plantation) <b>Source:</b> Potable tankers (Drinking purpose) & River water (Dust Suppression & Plantation) will be the source of the water.
21.	Solid waste	None

\*aerial distances in approximation, ML: Mining Lease

#### 1.4 Analysis of alternative Site and Technology

##### 1.4.1 Technology (No alternative technology is proposed)

Proposed Project is a simple open cast and Semi-mechanized Method using Light Earth movers, (e.g., Bar scrappers and Loaders) surface River Bed Mining project upto 3-meter maximum depth.

##### 1.4.2 Site (Not proposed)

No, alternative sites considered. The site is non-forest Govt. Land.

## 2.0 DESCRIPTION OF THE ENVIRONMENT

### 2.1 Introduction

The baseline environmental data in the vicinity (10 km) of said project site was monitored and collected by a NABL Certified & MoEF recognized Lab “Noida Testing Laboratory”, for one full season i.e., December 2020 to February 2021. The



baseline data monitoring procedures conforms to the requirement of EIA Notification, 2006 as amended time to time.

## **2.2 Geology and Drainage Pattern**

The allotted area is the river course of Sutlej River. It is a river borne deposit which comprises of Gravel channels formed due to annual deposition. The upper surface in terraced area covered with Coarse to medium soil where agriculture fields are developed by local people. Geologically, allotted area is belonging to Quaternary. Boulder, Gravel and Gravel are the major litho unit observed in the allotted area. The stratigraphic sequence of the litho units present in the area are as follows: -

Quaternary-Alluvial mixed with river Boulder, Gravel & sand older deposition of river sand unit Based on the structural configuration of the allotted area, surface geological mapping has been done and a Surface Geological Plan with cross-sections & longitudinal sections has been prepared on a scale 1: 2000. The following sequences have been observed in the area.

There is no water body exist within the lease area. There is no perineal water body within core & buffer zone. General drainage of the area is gently sloping.

The study area is having seasonal water bodies like ta Sutlej River at a distance of ~0.0 km which controls the drainage of study area.

## **2.3 Meteorology**

Meteorology plays a vital role in determining the transport and diffusion pattern of air pollutants released into atmosphere. The principal variables include horizontal convective transport (average wind speed and direction), vertical convective transport (atmospheric stability) and topography of the area.

Meteorological characteristics of an area are very much important in assessing possible environmental impacts and in preparing environmental management plan.

Since meteorological factors show wide fluctuations with time, meaningful interpretation can be drawn only from long-term reliable data. Such source of data is India Meteorological Department (IMD), which maintains a network of meteorological stations at several important locations.

The nearest IMD station to the study area is located at Bilaspur (approx. 33.0 km, ENE). The Meteorological data i.e., wind speed, and wind direction, recorded maximum & minimum from this IMD station for Winter Season, 2021 (Dec. 2020 to Feb. 2021) and was used to study the meteorology of the area.

#### **2.4 Ambient Air Quality**

Ambient Air monitoring was conducted at ten locations for PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>2</sub> during winter season as per method specified by CPCB. The results of analysis for the environmental parameters are shown below. The results of Silica freely available are analyzed at the six AAQM stations.

The Ambient Air Quality Monitoring reveals that monitoring stations the minimum concentrations of PM<sub>10</sub> were 62.2 µg/m<sup>3</sup> and maximum 79.9 µg/m<sup>3</sup>. The result of PM<sub>2.5</sub> reveals that the minimum concentration of 28.0 µg/m<sup>3</sup> while maximum concentration of 42.5 µg/m<sup>3</sup>.

#### **Water Quality**

Water samples were collected from different localities covering 10 km radial distance. These samples were examined for physico-chemical, heavy metals and bacteriological parameters. The water in general is not fit for drinking.

#### **2.5 Soil Characteristics**

The information on soil quality has been arrived at by collecting data from various secondary sources and supplemented by collection and analysis of soil samples from representative locations. In order to assess the base line characteristics of soil profile of the project area representing project and nearby areas, the samples were analyzed for key and chemical parameters.

The sampling locations were finalized with the following considerations:

- To enable information on baseline characteristics.
- To determine the impact of mining activities on soil characteristics.

Representative soil samples were collected from following different specified locations within the study area of the mine site. Standard operating procedures were followed for the sampling and analysis of physico – chemical parameters

#### **2.6 Noise Level Survey**

The Noise Levels were within the prescribed limits when compared with Ambient Noise Level standards in respect of noise vide rule-3 of Environmental

(Protection) Act 1986. The values of noise observed in some of the areas are primarily owing to vehicular traffic and other anthropogenic activities. Noise monitoring reveals that the maximum & minimum noise levels at day time were recorded as 51.6 dB(A) & 54.2 dB(A) respectively. The maximum & minimum noise levels at night time were found to be 40.2 dB(A) & 43.9 dB(A) respectively.

## **2.7 Flora and Fauna Studies**

### **a) Flora**

The climatic, edaphic and biotic variations with their complex interrelationship and composition of species, which are adapted to these variations, have resulted in different vegetation cover, characteristic of each region (Ohasi, 1975). The tree species, herbs, shrubs, climbers and major crops, were documented during this base line study. The dominant trees in the study area are *Albizia lebbek*, *Aegle marmelos*, *Cassia fistula*, *Eucalyptus globolus*, *Morus alba*, *Pinus roxburghi*, *Phoenix sylvestris*. Total 66 species of trees belong to 4 families are enumerated from the study area.

### **b) Fauna**

Schedule-I animals observed in the core & buffer zone during the period of study carried out in this area.

Conservation Plan Schedule-I species will be submitted during Final EIA/EMP Report. During the faunal survey in the area no wild life corridor or movement of wild animals was recorded in the proposed project site in buffer zone. Neither there was any established habitat of birds noticed along the river bed nor on the banks (buffer zone). Any nesting; breeding of any bird was not noticed in the core zone. However, a few of local birds were noticed crossing over the river and flying in the locality.

#### **1) Amphibians**

Among Indian Pond Frog (*Rana hexadactylus*) and Indian Cricket Frog (*Rana limnocharis*) were observed.

#### **2) Reptiles**

Among reptile's Indian chameleon (*Chamaeleonzey lanicaul*), home lizard was observed, while locals claim to have seen some snakes also.

### **3) Mammals**

Among mammal's Indian palm squirrel (*Funambulus pennanti*), cat, etc. were observed.

### **4) Aves**

Among aves common birds like crow (*Corvus splendens*), baya (*Ploceus philippinus*), pigeon (*Columba livia*), etc. were observed.

### **5) Butterflies**

The landscape of the study area does not support the habitat for butterflies. The common butterfly species recorded from the study area include; Plain Tiger (*Danaus chrysippus*), White-orange Tip (*Lxias Marianne*), Blue Pancy (*Precis orithya*), Plain leopard (*Phalanta phalantha*), Three-Spot Grass Yellow (*Eurema blanda*), Common Mormon (*Papilio polytes*).

## **2.8 Demography and Socio-Economics**

The significant observations are as follows:

The economy of these villages is agriculture based. 85% of the population is engaged in agriculture and its allied activities, 10% is in service class, whereas 05 % is working in the nearby locations as laborers with the contractors. The surrounding area is densely populated.

## **3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

### **3.1 Impact on Topography and Drainage**

As the proposed sand mine is a simple opencast river bed mining where the entire mining operation will be carried out in the river bed only, thus, there will be no change in the topography.

### **3.2 Impact on Land Use**

The proposed project being for river bed sand mining with a maximum depth of 3 meter, there is anticipated to negligible impact on the land use during mining. Further, due protective measures as required as per statute shall be strictly followed at the time of work.

### **3.3 Impact on Topsoil**

As the proposed mining project is a sand mining opencast project which is deficient of topsoil, as such there will be no loss of topsoil.

### **3.4 Impact on Air Quality**

Since the mining activities do not envisage any drilling and blasting, the quantum of dust generated is anticipated to be insignificant/ negligible and furthermore it

will be localized to the lease area only. The source of emissions from the proposed mining and operations will be from sand loading and sand transport activities.

### **3.5 Impact on Water Regime**

Because there is no wastewater discharge due to mining activities hence there will be hardly any impact of mining on the surface water regime. Whatever surface runoff develops in the lease area by rainfall in monsoon is anticipated to be the only source of contamination and the same will be allowed to join the natural drainage system as it was prior to mining activity. No impacts are anticipated on groundwater regime, aquatic flora & fauna due the activity of scooping of sand from the lease area.

### **3.6 Impact on Noise Levels**

With the mining operations not deploying any machinery for drilling and blasting, the only source of noise is due to truck transportation of sand. The number of vehicles plying is meager and as such there is anticipated to insignificant increase in level of noise due to proposed sand mining activity.

### **3.7 Impact on Socio Economic Aspects**

There is no displacement of persons involved as no land acquisition is involved. The proposed mine will provide direct and indirect job opportunities to the locals, which will help to raise the standard of living of the people.

### **3.8 Impact on Flora and Fauna**

Though the proposed mining project is a river bed sand mining opencast mine, there is anticipated to be insignificant impact on the aquatic flora and fauna of the region.

### **3.9 Traffic Analysis**

From the V/C (vehicle/carrying capacity of road) ratio analysis, the modified LOS estimated as 'A' and 'B' respectively. Thus, the additional load on carrying capacity will not significantly affect the level of service of road.

## **4.0 ENVIRONMENTAL MONITORING PROGRAMME**

The Environmental monitoring for the proposed mining and operations will be conducted in line with the existing guidelines of MoEF & CC/SPCB for the following:

- Air quality;
- Water and wastewater quality;
- Noise levels;
- Soil quality; and
- Greenbelt development

#### 4.1 Budgetary Provision for Environmental Monitoring Programme

##### a) Capital Requirement for Environmental Protection Measures:

It is felt that the above provisions are adequate to handle the existing pollution load. However, if need arises, necessary action along with provision of fund shall be accordingly taken as per the management plan given below:

**Table 4:** Environment Management Plan

Sr. No.	Particulars
1	Pollution monitoring – Air, Water, Noise
2	Pollution monitoring – Water sprinkling
3	Wire fencing at plantation sites
4	Plantation including maintenance
5	Haul road and other roads repair and maintenance
6	Pre-monsoon and post monsoon survey for sedimentation in the river bed

#### 4.2 Monitoring Parameters & Schedule

In order to examine the sustainability of the mining operation, the monitoring of all the Environmental parameters will be carried out at regular frequencies as per the schedule mentioned below:

**Table 5:** Schedule for monitoring of Environmental Parameters

S. No.	Parameters	Schedule
1.	Air Quality (mine and transportation network)	Twice a month (except monsoon)
2.	Water Quality (surface, GW of mine and of BZ)	Once a season (except monsoon)
3.	Soil Quality	Once a year (except monsoon)
4.	Ambient Noise Level	Twice a year (except monsoon)
5.	Flora and Fauna	Once in 2 years
6.	Socio-economic (physical survey)	Once in 3 years

#### 5.0 ADDITIONAL STUDIES

The following additional studies/activities have been carried out for this opencast sand mine for on different aspects as enumerated below:

- The public hearing will be conducted in compliance to EIA notification and the public hearing points raised and commitment of the project proponent will be incorporated;
- The Geology, Surface Hydrology & Hydro geological study for the proposed project of river bed mining has been carried out and details furnished in the EIA/EMP.
- Risk assessment studies have been carried out including preparation of disaster management plan;
- Occupational Health and safety studies have been conducted and a necessary plan prepared.

#### **6.0 PROJECT BENEFITS: -**

##### **6.1 Improvement in the Physical Infrastructure: -**

The basic requirement of the community needs will be strengthened by extending facilities based on the felt needs of the surrounding villages. Medical facilities will also be available in the form of dispensary at the mine.

##### **6.2 Improvement in the Social Infrastructure: -**

- Generation of employment and improved standard of living;
- Increased revenue to the State by way of royalty, taxes and duties; and
- Superior communication and transport facilities etc.

##### **6.3 Employment Potential: -**

The impact of proposed mining on the economic aspects can be clearly observed. The proposed mining activities will provide employment to persons of different skills.

##### **6.4 Corporate Social Responsibility**

As per the directions given by PCB / SEAC.

#### **7.0 ENVIRONMENTAL MANAGEMENT PLAN**

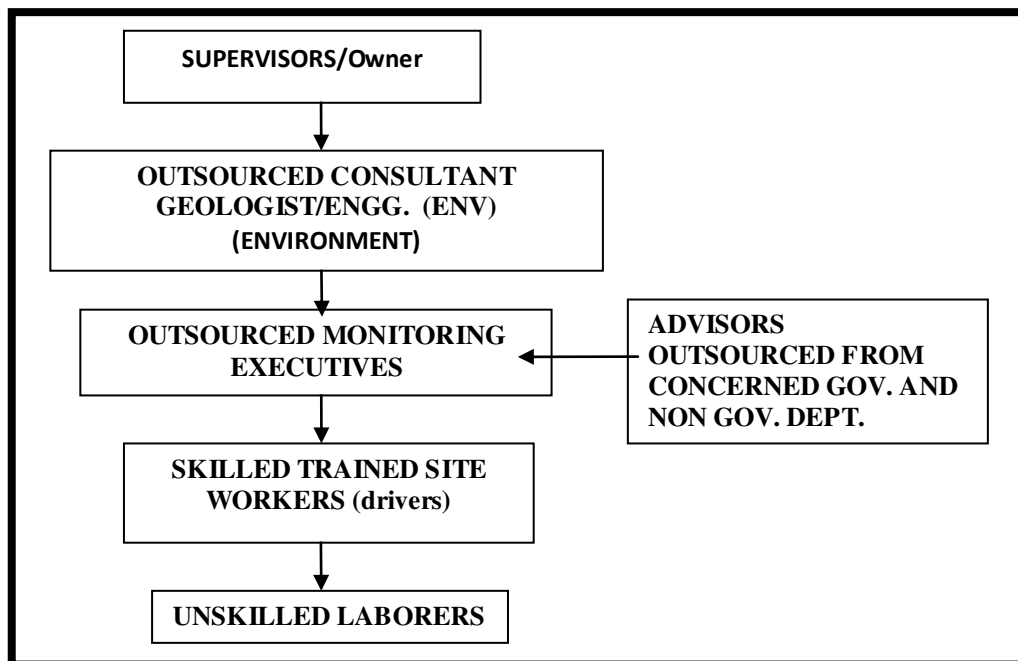
##### **7.1 Air Pollution, Water Pollution, Soil Pollution & Noise Level Management**

- Regular maintenance of vehicles and machinery shall be carried out in order to control emissions;
- Greenbelt development shall be taken up in consultation and prior permission of the concerned person/ Govt. Agency near the mine area and transportation road.
- Dust respirators will be provided to workmen working in dusty environment;
- Water sprinkling & Good housekeeping and proper maintenance shall be practiced which will help in controlling air pollution.

- Working personnel shall be provided and made to wear protective ear muffs/ ear plugs and noise helmets etc. as per statutory requirements and all Statutory Guidelines shall be followed.
- Labor camps will not be allowed on river bed.
- There will be no storage or piling of RBM in the adjoining area.

## 7.2 Administrative Aspects

Environmental Management Cell will be constituted and headed by the competent person and have a team which will co-ordinate the execution of activities like regular Environmental Monitoring, analysis of parameters, generation & submission of reports to Regulatory Authorities, monitoring the progress of Environmental Management Program, as per the stipulations of Environmental Clearance.



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