

# EXECUTIVE SUMMARY OF DRAFT EIA REPORT

FOR  
*Environmental Clearance for Proposed Malpuri Riverbed Sand Mining Project*

Address of Applied land	Land Khasra	Area of applied lease (Ha)
Village – Malpuri, Tehsil - Palari District- Balodabazar-Bhatapara , Chhattisgarh	502(part)	10.00

## *Applicant Name & Address*

Name of Applicant	Address
Padam Kumar Dadsena	S/o Komal Prasad Dadsena Village – H.No. 82, Sel, Tehsil – Kasdol District – Balodabazar-Bhatapara (Chhatisgarh) Pin Code - 493344

## *Terms of Reference*

Name of Applicant	Number and date of Terms of reference
Padam Kumar Dadsena	Vide letter no. 501/S.E.A.C.C.G./Ret Khadan /2746 Nawa Raipur Atal Nagar, Dated 13/05/2024

## **ENVIRONMENTAL CONSULTANT**



Environmental Consultancy & Laboratory  
(Lab. Gazetted by MoEF-Govt. of India)

**M/s. ULTRA-TECH**  
**ENVIRONMENTAL LABORATORY AND CONSULTANCY**

NABET Accredited EIA Consulting Organization  
NABET Accreditation Number: NABET/EIA/2023/RA019-Rev 01  
**Valid Upto - Oct 18,2024**

## TABLE OF CONTENTS

1.0 INTRODUCTION.....	4
2.0 PROJECT DESCRIPTION .....	7
2.1 Water Requirement- .....	8
2.2 Power Requirement .....	9
2.3 Manpower Requirement.....	9
3.0 DESCRIPTION OF ENVIRONMENT .....	10
3.1 Meteorology.....	10
3.2 Air Environment .....	10
3.3 Noise Environment.....	10
3.4 Water Environment.....	11
3.5 Soil Quality .....	11
3.6 Biological Environment .....	13
3.7 Socio-economic Environment .....	13
4.0 ANTICIPATED ENVIRONMENT IMPACTS AND ENVIRONMENT MANAGEMENT PLAN.....	14
5.0 ENVIRONMENTAL MONITORING PROGRAM.....	16
6.0 RISK ASSESSMENT .....	21
7.0 EMERGENCY RESPONSE AND DISASTER MANAGEMENT PLAN.....	21
8.0 PROJECT BENEFITS .....	21
9.0 BUDGET FOR SOCIAL DEVELOPMENT .....	22
10.0 ENVIRONMENT MANAGEMENT PLAN (EMP) .....	22
11.0 CONCLUSION .....	22

*Executive Summary of Draft EIA Report of Malpuri Riverbed Sand Mining of Padam Kumar Dadsena at Village Malpuri, Tehsil- Palari, District- Balodabazar-Bhatapara, State- Chattishgarh.*

## **LIST OF TABLES**

Table E.1: Environmental Setting around Project Site .....	5
Table E-2: Salient Features of the Proposed Mining Project.....	7
Table E-3.1: Water Requirement Details for Archit Soni.....	8
Table E-4: Manpower Details Achholi Farshi Pathar Mine .....	9
Table E-5: Meteorological Data of the study area (IMD – Raipur).....	10
Table E- 6: ENVIRONMENTAL BASELINE STUDY .....	11

## **LIST OF FIGURE**

Figure 1: Location map of the Project Site .....	5
Figure 2: LULC Classification (10 km radius Proposed Project Area) of the project site .....	13
Figure 3: Population Concentration Map of the study area .....	14

## EXECUTIVE SUMMARY

### 1.0 Introduction

The proposed project is a project of Mining of Riverbed Sand (lease area– 10 Ha of Riverbed Sand) village- Malpuri, tehsil- Palari, district Balodabazar-Bhatapara, State Chattishgarh. Details of the entire lease are discussed in the further chapters. The lease holder of the area is Padam Kumar Dadsena having lease area of 10 Ha. TOR issued in favour of project proponent whose details is as follow –

**Malpuri Sand Mine** – Vide letter no. 501/S.E.A.C.C.G/ Ret Khadan /2746 Nawa Raipur Atal Nagar, Dated 13/05/2024.

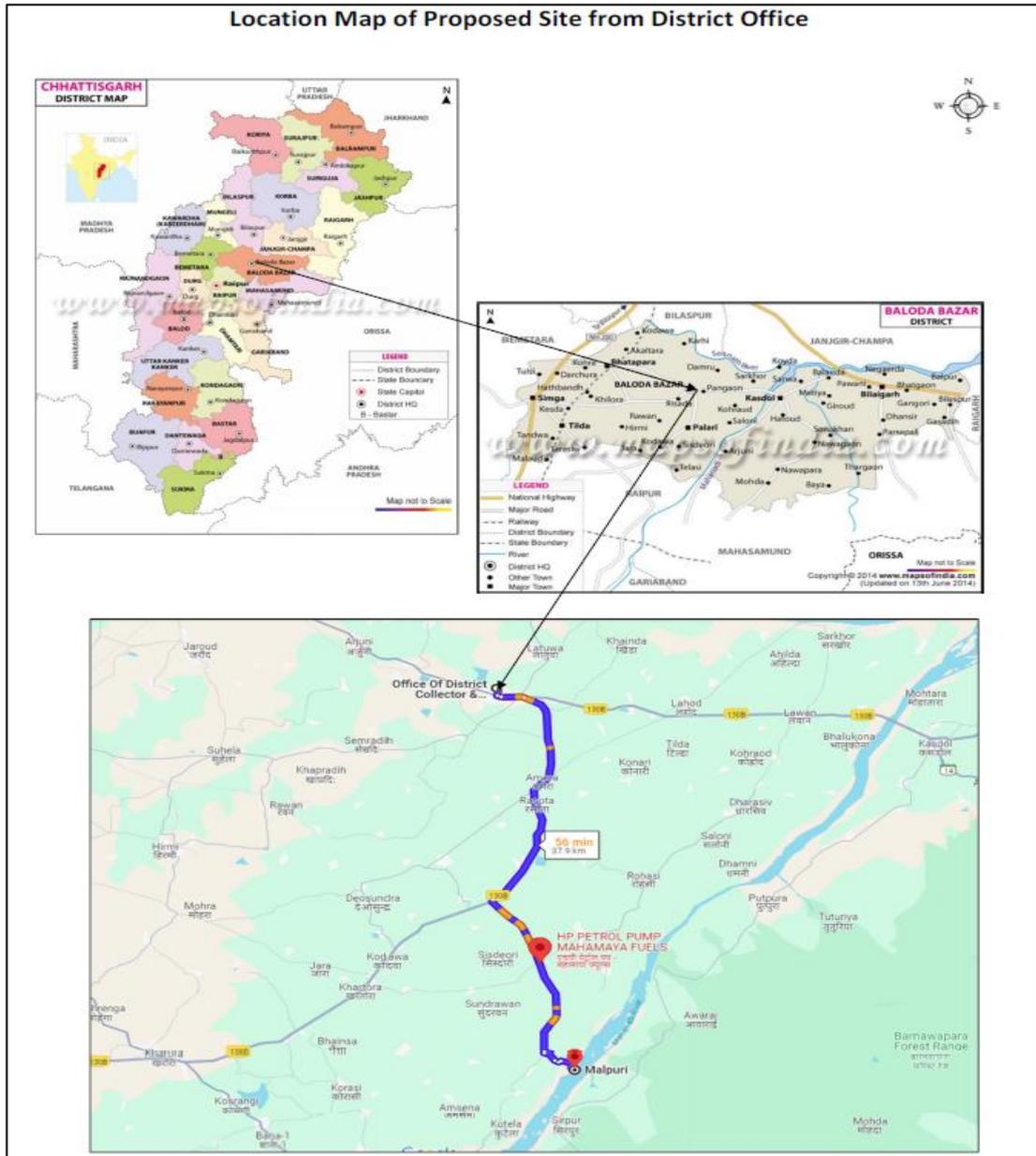
As per MoEF Notification dated 15.01.2016 Appendix – XI (6) ‘A cluster shall be formed when the distance between the peripheries of one lease is less than 500 m from the periphery of other lease in a homogeneous mineral area’. The proposed Riverbed Sand mining is an individual mine.

According to above, information about the mines coming under B1 category whose ownership and lease details is as follows.

#### **Project Location –**

The proposed project of Malpuri Riverbed Sand mine having an area of 10.00 hect. and situated at Village- Malpuri, Tahsil- Palari, District: Balodabazar-Bhatapara, State: Chattishgarh under Khasra No. 502(Part). Applied production is 1,80,000 cum/yr. The proposed method of mining is open cast semi mechanized mining.

*Executive Summary of Draft EIA Report of Malpuri Riverbed Sand Mining of Padam Kumar Dadsena at Village Malpuri, Tehsil- Palari, District- Balodabazar-Bhatapara, State- Chattishgarh.*



**Figure 1: Location map of the Project Site**

**Table E.1: Environmental Setting of Proposed Riverbed Sand Mining Projects**

Particulars	Details
Name of the Project	Malpuri Riverbed Sand Mining Project, Area: 10.00Ha. (Govt. land)

*Executive Summary of Draft EIA Report of Malpuri Riverbed Sand Mining of Padam Kumar Dadsena at Village Malpuri, Tehsil- Palari, District- Balodabazar-Bhatapara, State- Chattishgarh.*

Particulars	Details															
Location of the Project	Village- Malpuri, Tehsil- Palari, District- Balodabazar-Bhatapara, State- Chhattisgarh															
Geographical Coordinates:	<table border="1"> <thead> <tr> <th>Pillars</th> <th>Latitude(N)</th> <th>Longitude(E)</th> </tr> </thead> <tbody> <tr> <td>M 1</td> <td>21°22'54.45"N</td> <td>82°11'28.74"E</td> </tr> <tr> <td>M 2</td> <td>21°23'5.90"N</td> <td>82°11'42.19"E</td> </tr> <tr> <td>M 3</td> <td>21°23'1.47"N</td> <td>82°11'46.60"E</td> </tr> <tr> <td>M 4</td> <td>21°22'49.74"N</td> <td>82°11'33.00"E</td> </tr> </tbody> </table>	Pillars	Latitude(N)	Longitude(E)	M 1	21°22'54.45"N	82°11'28.74"E	M 2	21°23'5.90"N	82°11'42.19"E	M 3	21°23'1.47"N	82°11'46.60"E	M 4	21°22'49.74"N	82°11'33.00"E
Pillars	Latitude(N)	Longitude(E)														
M 1	21°22'54.45"N	82°11'28.74"E														
M 2	21°23'5.90"N	82°11'42.19"E														
M 3	21°23'1.47"N	82°11'46.60"E														
M 4	21°22'49.74"N	82°11'33.00"E														
Size of the Project	10.00 Ha															
Nearest Highway	NH -130 B at 14.70 Km towards North-West (Raipur-Balodabazar Road) SH-10 at 30.40 km towards North-West (Balodabazar-Bhatapara Road)															
Nearest railway station	Belsonda at – 29.80 km, towards South-West.															
Nearest Airport	Swami Vivekanand Airport Raipur–51.75 km, toward South-West.															
Nearest town/City	Palari– 16.00 km, North-West															
Densely populated or built-up area	Palari – 16.00 km District Headquarter, Balodabazar – 30 km North-West															
Archaeologically important places	Archeological Museum at 4.00 km towards south															
Water Body	<table border="1"> <tbody> <tr> <td>Reservoir/ Dam</td> <td>-</td> <td>5.60 km towards North-East( Pasid Reservoir)</td> </tr> <tr> <td>Irrigation Canal</td> <td>-</td> <td>2.80 km towards north-west</td> </tr> <tr> <td>Water Supply / Irrigation Scheme / Anicut</td> <td>-</td> <td>Anicut at 12.20km towards South-West overMahanadi river</td> </tr> <tr> <td>Nalla</td> <td>-</td> <td>Nalla 590 m towards South-West.</td> </tr> <tr> <td>Tank /Pond</td> <td>-</td> <td>Village pond at 1.15 km towards west</td> </tr> </tbody> </table>	Reservoir/ Dam	-	5.60 km towards North-East( Pasid Reservoir)	Irrigation Canal	-	2.80 km towards north-west	Water Supply / Irrigation Scheme / Anicut	-	Anicut at 12.20km towards South-West overMahanadi river	Nalla	-	Nalla 590 m towards South-West.	Tank /Pond	-	Village pond at 1.15 km towards west
Reservoir/ Dam	-	5.60 km towards North-East( Pasid Reservoir)														
Irrigation Canal	-	2.80 km towards north-west														
Water Supply / Irrigation Scheme / Anicut	-	Anicut at 12.20km towards South-West overMahanadi river														
Nalla	-	Nalla 590 m towards South-West.														
Tank /Pond	-	Village pond at 1.15 km towards west														
Protected areas as per Wildlife Protection Act (Tiger reserve, Elephant reserve, Biospheres, National parks, Wildlife sanctuaries, community reserves and conservation reserves)	None within 10 km radius															
Reserved / Protected Forests	<ol style="list-style-type: none"> <li>1. Near Khamtarai R.F. - 0.65 Km</li> <li>2. Near Sirpur R.F – 2.00 Km</li> <li>3. Near Mohakam R.F . – 7.50Km</li> </ol>															
Defense Installations	None within 10 km radius															
Seismicity	Since project site comes under Seismic zone II, which is least active zone for earthquakes as per IS: 1893 (Part 1: 2002).															

*Executive Summary of Draft EIA Report of Malpuri Riverbed Sand Mining of Padam Kumar Dadsena at Village Malpuri, Tehsil- Palari, District- Balodabazar-Bhatapara, State- Chattishgarh.*

Particulars	Details
Wildlife Sanctuary	None within 10 km radius
National Park	None within 10 km radius
Biosphere reserves	None within 10 km radius
Important migration routes of birds	None within 10 km radius
Ramsar sites (Wetlands of International Importance)	None within 10 km radius
Unique or threatened ecosystems	None within 10 km radius
Important topographical features, including ridges, river valleys, shorelines, and riparian areas	None within 10 km radius
Mangrooves	None within 10 km radius
Physical Sensitive Receptors	None within 10 km radius
Notified Ground Water Zone by CGWA	None within 10 km radius
Critically Environmental polluted Area	None within 10 km radius
Pollution Sources	None within 10 km radius

## 2.0 Project Description

The proposed project of Malpuri Riverbed Sand Mine having an cluster area of 10 Ha is situated at village Malpuri ,tehsil Palari, district Balodabazar-Bhatapara, State Chattishgarh. The proposed method of mining is open cast semi mechanized mining.

**Table E-2: Salient Features of the Proposed Mining Project**

INFORMATION	DETAILS
Name of the project	Malpuri Riverbed Sand Mine
Village	Malpuri
Tahsil	Palari
District	Balodabazar-Bhatapara
State	Chhattisgarh
Toposheet No	64 K/3
Name of Lease holders	Padam Kumar Dadsena

*Executive Summary of Draft EIA Report of Malpuri Riverbed Sand Mining of Padam Kumar Dadsena at Village Malpuri, Tehsil- Palari, District- Balodabazar-Bhatapara, State- Chattishgarh.*

Address and Contact details of Lease Holders	S/o. Komal Prasad Dadsena H.No.82, Village – Sel, Tahsil-Kasdol, Dist. – Balodabazar-Bhatapara Pin code –493344
Name of the Mineral to be mined	Riverbed Sand
Type of land	Govt. Land
Status of Operation (New Project or Existing Project operating since)	New Project
Mine Area	10.00 Ha
Ultimate depth of mining	3 m
Minable Reserve	1,80,000cum
Production Capacity	1,80,000 cum/yr
Life of Mine	Not applicable as applied area is river bed sand mine where mine pit gets replenished during moonsoon season
Quantity of topsoil and Overburden estimated to be removed	Nil. This is ordinary river bed sand. There have no any top soil or overburden.
Depth of Ground Water Table	3.00mtr of depth from top surface layer.
Method of Mining	Opencast Semi-Mechanized
No.of working days	240 Days
SeismicZone	SeismicZone II

### **2.1 Mining Methodology**

The method of mining is open cast semi-mechanized i.e. ordinary sand will be excavated in layers of 1meter depth to avoid ponding effect and after first layer is excavated; the process will be repeated forthe next layer so on up to a depth of 3 meter in Riverbed. Sand will be gathered in small hips onsuitable areas as instructed for loading purpose. Loading will be done by deploying light capacity andlight weight loaders.

### **2.2 Water Requirement-**

The total water requirement shall be 9.00 KLD for domestic, green belt and sprinkling purpose, which will be sourced from Water Tankers from nearby village. Detail of water requirement is given below:

*Executive Summary of Draft EIA Report of Malpuri Riverbed Sand Mining of Padam Kumar Dadsena at Village Malpuri, Tehsil- Palari, District- Balodabazar-Bhatapara, State- Chattishgarh.*

**Table E-3.1: Water Requirement Details**

Sr. No.	Usage	Water Requirement	
1.	Greenbelt Development @ 2.5 L/tree	2000Trees X 2.5Lit/day = 5,000Lit/day	5.00KLD
2.	Dust Suppression @ 0.5 L/Sqm (twice a day)	Haul /Approach road Area = (570 m Length x 4 m width = 2,2,80 sqm.) x 0.5 li/sqm = 1,140 lit /day x 2 time = 2,280 lit/day	3.00 KLD
3.	Domestic Purpose @35 lpd/worker	24 workers x 25 lit per day = 600Lit/Day	1.00 KLD
<b>Total ::</b>			<b>9.00KLD</b>

### 2.3 Power Requirement

Power is not required in operation phase of the proposed project, as diesel equipments will be used. Open cast semi mechanized method will be used for excavation. There is no power requirement for the project as excavators will run on diesel and the excavation will be done only day time.

### 2.4 Manpower Requirement

The mining project will generate direct & indirect employment. About 24 per day people will get direct employment, and some persons will also be affected indirectly and employed with allied and related industries, such as transportation, maintenance, etc. Following staff & workers are proposed to be employed: -

**Table E-4: Manpower Details Malpuri Riverbed Sand Mine**

S.No.	Category	No. of persons
1	Assistant Manager	1
2	Foreman	1
3	Supervisor staff	1
4	Supervisor cum First Alder (Skilled)	2
5	Semi – Skilled/ skilled Labours	2
6	Unskilled personnel	2
7	Driver and Machine operators	15
<b>Total</b>		<b>24</b>

### 3.0 Description of Environment

The area around the proposed mining site has been surveyed for physical features and existing environmental scenario. The field survey and baseline monitoring has been done from the period of Post Monsoon Season- (20th October 2023 -20th January 2024). The observations for Post Monsoon Season- (20th October 2023 -20th January 2024) are summarized below:

#### 3.1 Meteorology

The secondary meteorological data of the study period collected from (<https://www.nasa.gov.in/>). The month wise meteorological data is given in Table E-5.

**Table E-5:0 Meteorological Data of the study area (IMD – Raipur)**

Period	Wind Speed (m/s)			Temp (°C)			Relative Humidity (%)			Rainfall (mm)			Solar Radiation		
	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg
Oct -23	3.66	0.34	1.94	28.4	14.24	21.04	100	53.2	76.6	0	0	0	856.7	0	227.24
Nov -23	5.11	0.23	2.24	27.9	12.21	20.24	100	51.9	82.81	0.71	0	0.01	769.85	0	181.93
Dec -23	7.43	0.38	2.41	26.35	7.38	16.82	100	44.6	80.95	1.92	0	0.04	725.95	0	169.49
Jan -24	3.69	0.13	2.30	26.23	10.13	17.91	100	44.4	78.2	0	0.018	0.018	762.83	0	154.18

Source: Weather Summary for 20<sup>th</sup> October 2023 - 20<sup>th</sup> January 2024(<https://www.nasa.gov.in/>)

#### 3.2 Air Environment

The ambient air quality is carried out at 10 locations in and around the project site and studies are carried out as per CPCB standards. It is observed that, all the values are within the prescribed limits as per National Ambient Air Quality Standards (NAAQS), 2009.

The results are compared with the standards prescribed by Central Pollution Control Board (CPCB).The overall ambient air quality around the proposed mine lease is within the limits of ambient air quality standards prescribed by CPCB.

The observations for Post Monsoon season-(20th October 2023 -20th January 2024)are summarized below:

#### 3.3 Noise Environment

*Executive Summary of Draft EIA Report of Malpuri Riverbed Sand Mining of Padam Kumar Dadsena at Village Malpuri, Tehsil- Palari, District- Balodabazar-Bhatapara, State- Chattishgarh.*

Noise levels were monitored in ten locations including project within the study area. The noise levels ranged between 53.0 to 66.1 dB (A) during day time and noise levels ranged between 42.2 to 57.5 dB (A) during night time. Over all the monitored noise levels are found to be within the stipulated standards set by CPCB.

### 3.4 Water Environment

In order to establish the baseline water quality, 5 ground water and 4 surface water samples were collected and analyzed in the study area. The quality of surface water samples was compared with surface water specification IS 2296:1982 and the surface water quality comes under Class C (Propagation of wildlife and fisheries). The ground water samples were compared with drinking water specification IS 10500:2012 standards.

### 3.5 Soil Quality

A total of 10 samples in and around the project site are collected and analysed. It has been observed that the pH of the soil quality ranged from 7.7 (S6 & S8) to 6.8 (S3) indicating that the soil is slightly alkaline in nature.

**Table E- 6: ENVIRONMENTAL BASELINE STUDY**

Particular	Number of Locations	Description
<b>Background Ambient Air Quality Monitoring</b>	Sampling was done at 10 Locations	PM <sub>10</sub> :-44 to 69 µg/m <sup>3</sup> PM <sub>2.5</sub> :-17 to 36 µg/ m <sup>3</sup> SO <sub>2</sub> :- 5 µg/ m <sup>3</sup> to 14µg/ m <sup>3</sup> NOx:- 7 to 23 µg/ m <sup>3</sup> CO:-0.4 to 1.5 mg/ m <sup>3</sup> SiO <sub>2</sub> -0.02 to 0.05 µg/ m <sup>3</sup>
<b>Noise Level Monitoring</b>	Monitored at 10 Locations	Noise Level During Day Time :- 53.0 to 66.1 dB (A) Noise Level During Night Time:- 42.2 to 57.5 dB (A)
<b>Water Sampling</b>	Ground water sampling was done at - 5 Locations	pH :- 7.1 to 7.9 ; TDS :- 352 to 542 mg/l ; Total Hardness :- 224 to 344 mg/l SO <sub>4</sub> :-48 mg/l to 62 mg/l; Chloride :- 57 mg/l to 95 mg/l; Zn & Fe: - Below detectable limit.
	Sampling:- 4 at Surface water	pH :- 7.3 to 7.8 ; TDS :- 226 mg/l to 568 mg/l; Dissolve oxygen: - 5.6 to 6.00 mg/l. Chloride :- 44 mg/l to 124 mg/l; Calcium :- 26 mg/l to 66 mg/l;

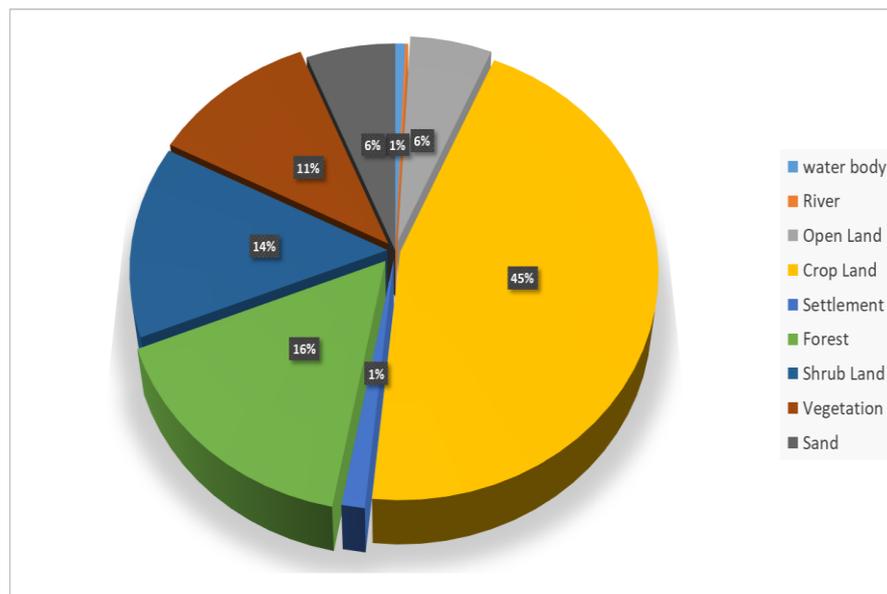
*Executive Summary of Draft EIA Report of Malpuri Riverbed Sand Mining of Padam Kumar Dadsena at Village Malpuri, Tehsil- Palari, District- Balodabazar-Bhatapara, State- Chattishgarh.*

		Magnesium :- 14 mg/l to 37 mg/l; Total Hardness :- 122 to 316 mg/l ;
<b>Soil Sampling</b>	Sampling was done at 10 Locations	pH :- 6.8 to 7.7; Nitrogen:- 168 to 231 kg/ha. Phosphorus:- 55 to 86 kg/ha Potassium :- 58 to 85 kg/ha Electric Conductivity:- 0.287 to 0.463 ms/cm

**Land Use/Land Cover of the Study Area**

The location of the project is situated near Malpuri village is located in Palari tehsil of Raipur district in Chhattisgarh, India. As per 2009 stats, Malpuri village is also a gram panchayat. Palari is nearest town to malpuri for all major economic activities. As per constitution of India and Panchyati Raaj Act, Malpuri village is administrated by Sarpanch (Head of Village) who is elected representative of village.

The village area falls on the Survey of India topo sheet 64K/3 of SOI (Survey of India), as shown in figure 11.1. Figure 11.2 shows the land use map and the land cover map of the study area covering a distance of 10 Km. The LULC map in Figure 11.2 shows that the analysis consists of 8 areal classes Water body, Canal, River, Crop Land, Settlement, Sand banks, shrublands and vegetation..Malpuri village has a total land area of 10.00 hectares. Malpuri has a total population of 176517 people, 22413 of whom are male and 24317 of them are female. Malpuri village has the proportion of literate and illiterate population is 53% and



*Executive Summary of Draft EIA Report of Malpuri Riverbed Sand Mining of Padam Kumar Dadsena at Village Malpuri, Tehsil- Palari, District- Balodabazar-Bhatapara, State- Chattishgarh.*

47% in the study area.

**Figure 2: LULC Classification (10 km radius Proposed Project Area) of the project site**

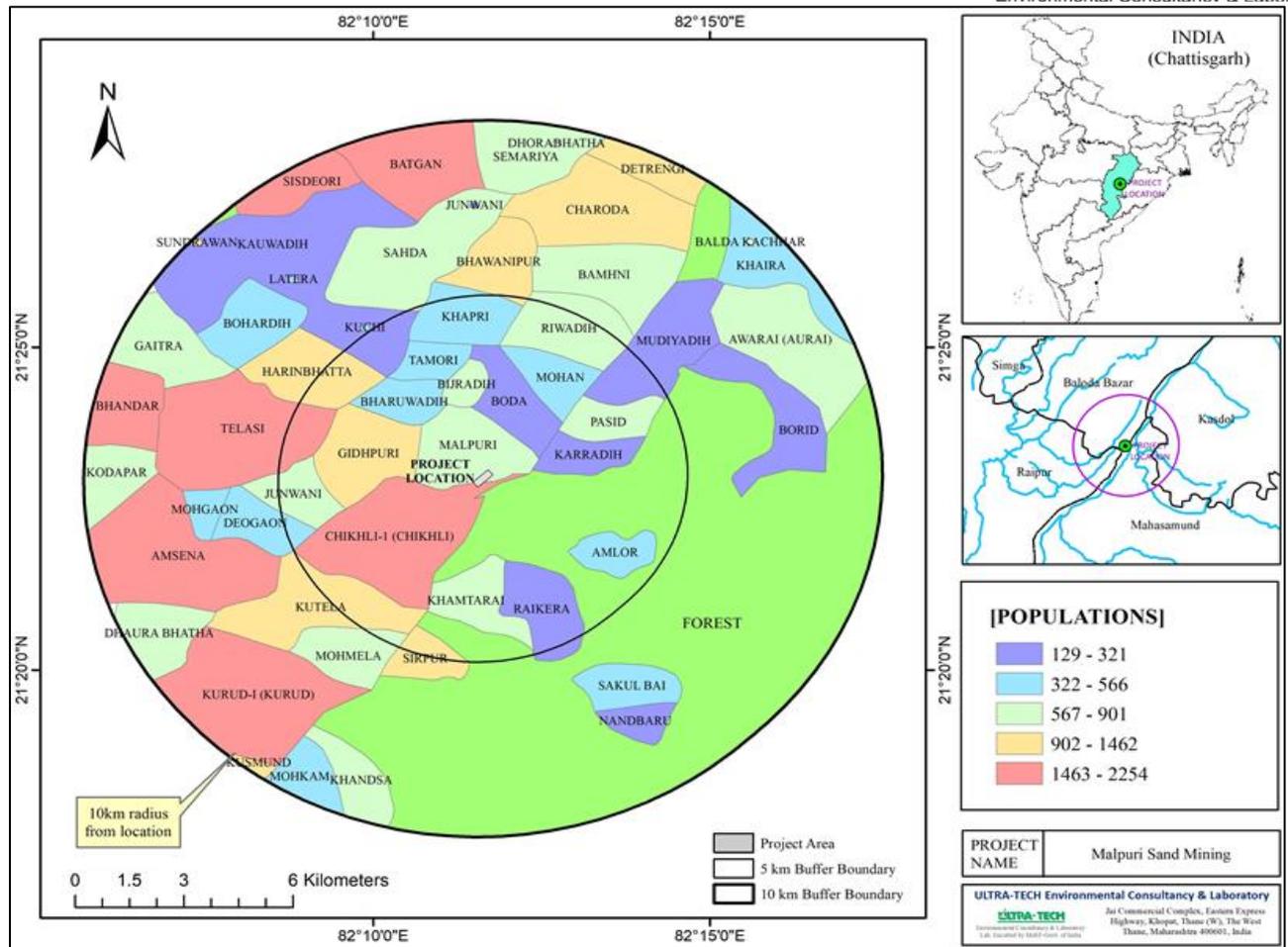
### ***3.6 Biological Environment***

The ecological study of the area has been conducted within 10 km radius of the project site in order to understand the existing status of flora and fauna to generate baseline information. Following PF are being observed within 10 km surrounding from the project site

<b>SN</b>	<b>Name of forest block</b>	<b>Type of Forest</b>	<b>Distance (km)</b>
1	Near Khamtarai	Reserved forest	0.65
2	Near Sirpur	Reserved forest	2.00
3	Near Mohakam	Reserved forest	7.50

### ***3.7 Socio-economic Environment***

Although the study area (10 km radius from the project location) is divided based on secondary data (Population Census 2011), the total population of the study area is 176517, as shown in Table 11.2. There are 38718 households on a surface area of 370.06 sq.km. In the study area, the total male population is 22413, which is somewhat lower than the female population of 24317. Figure 1.1 depicts the village-wise population concentration in the study region defined by a 10-kilometer radius from the project location. A map of the research area has been developed based on the concentration of people within a 10 km radius of the study area—the highest population in the village of Kurud-I (2254), which is located along the southwestern edge of the area around project location at 10 km radius. In Malpuri, where the project location is located possess a total population of 606. The remaining settlements in the study region have a moderate to low population density. Then the villages situated in north of the project location comprise of low population.



**Figure 3: Population Concentration Map of the study area**

#### 4.0 Anticipated Environment Impacts and Environment Management Plan

##### *Land/Soil Environment Impact Mitigation*

The mitigation measure of the land environment includes:

- The Riverbed Sand excavated from the lease area will be completely sellable resulting no dump with in the lease area.
- Due to semi mechanised mining operation emission from the Riverbed Sand mines are negligible, there will be no impact on the surrounding soil quality and cropping pattern of the area.
- The propose project falls under the seismic zone –II (Low Hazard Risk Zone). Since this project will not have physical infrastructure to be constructed, no impact of seismicity is envisaged in this project. Further, this project will not change/alter the seismic behaviour of the area.

*Executive Summary of Draft EIA Report of Malpuri Riverbed Sand Mining of Padam Kumar Dadsena at Village Malpuri, Tehsil- Palari, District- Balodabazar-Bhatapara, State- Chattishgarh.*

### ***Air Impact Mitigation***

The mitigation measures undertaken in the mine for control of air pollution are:

- Checking of vehicles and machinery to ensure compliance to Indian Emission Standards. Transportation vehicles and machinery to be properly and timely maintained and serviced regularly to control the emission of air pollutants in order to maintain the emissions of NO<sub>x</sub> and SO<sub>x</sub> within the limits established by CPCB.
- Total 9.00 KLD water required for riverbed sand mines towards dust suppression purpose for which 1 no. of water tanker with 4000 liter capacity will be hired and used for water sprinkling twice in a day in haul roads, dumping site, loading and unloading site of each lease and this will be regularly monitored by the lease management. Water sprinkling on transport road side, stock yard (if any) etc. will be done by tractor mounted water sprinkler.
- Regular impaction and grading of haul roads will be done to clear the accumulation of loose material
- All the mines workers will be provided with the dust masks.
- Trees can act as efficient biological filters. As this is a small lease, the area available for plantation is very less. However a well planned plantation programme has been proposed for the mining area to arrest the dust pollution within the lease boundary. There is the proposal for continuous plantation along the river bank and both side of the road connecting the cluster.
- Vehicles with valid PUC shall be used for transporting the minerals to avoid the exhaust emission.
- A greenbelt development plan is prepared with local species. The greenbelt on the periphery will reduce the dust level
- Regular monitoring of the air quality as per the monitoring plan detailed in Chapter 6 of this EIA report shall be adopted during the operation phase, to ensure that, the air quality is within the desired limits prescribed by CPCB.

### ***Noise Impact Mitigation***

- No noise polluting work shall be carried out in the night hours
- Provision of PPE's for the workers
- Vehicles to be serviced regularly and maintained properly to avoid any unwanted generation of noise or vibration from them

***Executive Summary of Draft EIA Report of Malpuri Riverbed Sand Mining of Padam Kumar Dadsena at Village Malpuri, Tehsil- Palari, District- Balodabazar-Bhatapara, State- Chattishgarh.***

- Green belt plantation and garden trees will help in reducing the noise, traffic related pollution and heat island effects.
- Proper lubrication, muffling and modernization of equipment shall be used to reduce the noise during operation phase.
- Regular monitoring of the noise levels as per the monitoring plan detailed in Chapter 6 of this EIA report, shall be adopted during the operation phase, to ensure that, the noise levels are within the limits prescribed by CPCB.

### ***Water Impact Mitigation***

- Provision of temporary toilets for laborers
- Domestic waste water will be treated into septic tank followed by soak pit outside of the proposed cluster project with a safe distance and no wastewater will be allowed to be get discharged into the water body
- Any areas with loose debris within the lease hold should be planted.
- Garland drains should be constructed surrounding the waste dumps and should be connected to the surface water reservoir to avoid the run-off mixing directly to natural water channels before settling.
- Ground water table will not be intersected during the mining activity

### ***Biological Impact Mitigation***

#### **Impact on Flora**

- As it is sand mining project, activities will be confined to (river bed) core zone only. The project area is surrounded by agricultural land. There is no forest land involved in mine lease area. Thus no direct impact is foreseen on the flora of the forest area because of mining, whereas activities related to mining as transportation of material and passage of workers to and from mining area will have an adverse impact on the road side flora.
- Significant reduction in total chlorophyll content at road side plant species affects the plant species by affecting the plant metabolism. The reduction in chlorophyll concentration corresponds directly to the reduction in plant growth.

#### **Mitigation Measures**

*Executive Summary of Draft EIA Report of Malpuri Riverbed Sand Mining of Padam Kumar Dadsena at Village Malpuri, Tehsil- Palari, District- Balodabazar-Bhatapara, State- Chattishgarh.*

- Plantation will be carried out on approach roads and surrounding of project site.
- Native plant species which are stress and pollution tolerant and comparatively well acclimatized should be grown along roadsides, for selection of plant species it is necessary to consider certain factors as agro climatic suitability, height and canopy architecture, growth rate and habit and aesthetic effect (foliage, conspicuous and attractive flower color).
- Annual bio-monitoring of roadside plants exposed to vehicular pollution will be done to check the dust load and Air Pollution Tolerance Index (APTI).

### **Impact on Fauna**

The mining, specifically, will have no adverse impact on fauna whereas the operational activities such as human activity, transportation and noise generation may have an adverse impact on fauna.

- No national park wild life sanctuary is present within 10 km area so radius of study area. No major wildlife observed within mine lease area during the survey period. Considering size of mine and management practice by scientific method of mining with proper Environmental Management Plan including pollution control measures especially for air and noise, which will not cause any adverse impact on the surrounding animals.
- Greenbelt development will be carried out which will help in arresting dust and minimizing sound level arising from the mining operation.
- Some fauna will move from the area of the road side as a result of habitat loss and physical disturbance

### **Mitigation Measures**

- All equipment should have sound-control devices no less effective than those provided on the original equipment. Motorized equipment used should be adequately muffled and maintained.

*Executive Summary of Draft EIA Report of Malpuri Riverbed Sand Mining of Padam Kumar Dadsena at Village Malpuri, Tehsil- Palari, District- Balodabazar-Bhatapara, State- Chattishgarh.*

- Use exhaust silencers and optimized acoustical pipe lagging (acoustical wrapping) to minimize compressor noise.
- As the mining site is river so there is no vegetation, thus clearance of vegetation is not required.
- Thus there will be no loss for wildlife.
- Large woody debris in the riparian zone will be left undisturbed or replaced when moved and not be burnt.
- The drilling and transportation will be carried out during the day time only minimizing the impact on the wild fauna movement.
- Fencing around the entire mine lease area is recommended in order to restrict the entry of stray animals into the mining area.

### ***Socio-Economic Environment Impact Mitigation***

No doubt setting up a project of some sort will have a significant impact on the socioeconomic and cultural life of the people in the project area. Here an attempt is made to envision and evaluate the tentative results that the project is likely to yield. The possible impacts are described below due to the operation of the project:

#### **▪ Positive outcomes**

Mining is the foundation of building the country's economy. As given below the proposed project has the following benefits:

- Mining is the basis of the economy of the country. The following benefits are given as set out below for the proposed project.
- Jobs for local persons.
- Punish the tax on the state government. GST, cessation of wages, levies, etc. in the form of excise duty.
- The generation of the market is coming back.
- Appropriate EMF funds will boost the productivity of the environment.
- CSR funds may be used for the welfare of people in villages.
- The new project would contribute to the enhancement of the facilities that will attract the company's houses.

***Executive Summary of Draft EIA Report of Malpuri Riverbed Sand Mining of Padam Kumar Dadsena at Village Malpuri, Tehsil- Palari, District- Balodabazar-Bhatapara, State- Chattishgarh.***

- Mining operations will help to establish a local socioeconomic scenario.

- **Negative outcomes**

Due to the planned activity of the project, the population inflow would increase during the construction period. This could lead to a strain on infrastructure resources in the area, as well as an increase in the local population. However, this consequence is of a limited time and a temporary nature only.

- During the construction process, increased levels of dust and other air pollutants can lead to health problems.
- Noise pollution can be caused by vehicle traffic and construction activities.
- Appropriate mining may have detrimental effects on local soil and groundwater.
- Unnaturally high concentrations of chemicals such as arsenic, sulphuric acid, and mercury over a wide area of surface or subsurface water are not taken until sufficient action is taken.
- Runoff containing these chemicals can lead to the destruction of the surrounding vegetation.

### **Mitigating intervention**

To mitigate the adverse impacts likely to occur in the local area due to the proposed and current project activities, an effective mitigation plan must be established. The following recommendations are as follows:

- **Before and after the initial phase:**

- The contact with the local community should be institutionalized and carried out daily. The forum will provide opportunities to address local critical issues and to train programmers for shared benefits.
- Relevant Information on the planned and current development plan, community services, etc should be conveyed to the local community in the form of booklets and audio-visuals.
- According to the expectations of the local citizens, staff, project officials, should carry out CER activities in the local region

- ❖ **Step of Operation:**

- Plan supporters should take appropriate precautions to ensure that the environment is secure and healthy during the construction process.
- Appropriate drinking water, toilet and bathing facilities should be made available on the project site.
- In order to regulate air pollution and thus avoid adverse health effects, water is sprinkled/spread to suppress dust during the construction process.
- Proper living arrangements with sufficient facilities for residential labor should be provided.
- Appropriate preparation and awareness-raising events should be carried out in such a way that workers understand the importance of wearing personal protective equipment.
- The first aid and medical services will be given to all the persons concerned working on the site. 4
- Collectively, colony management would include transporters, drivers, builders, watchmen, fitters, machine operators. Preference should be given to local citizens for all of this.

## **5.0 Environmental Monitoring Program**

Environmental monitoring shall be carried out at the locations to assess the environmental health in the post period. A post study monitoring programme is important as it provides useful information on the following aspects.

- It helps to verify the predictions on environmental impacts presented in this study.

- It helps to indicate warnings of the development of any alarming environmental situations, and thus, provides opportunities for adopting appropriate control measures in advance.

Detailed EMP plan during the operation phase is given chapter 6 of EIA report.

### **6.0 Risk Assessment**

The hazards and its risk assessed during the operation phase of the proposed Riverbed Sand mining project are low, medium & high. The project proponents are proposed to implement all the mitigation measures to prevent the impact or consequences of the risk expected to be happened in both the project sites. The level of impact after implementing the mitigation measures will be low/medium in all the hazards identified.

### **7.0 Emergency Response and Disaster Management Plan**

Impact of disaster can be significantly reduced through attempts at preparedness, mitigation, and post-event rehabilitation work. Based on hazard identification in the proposed project, an emergency plan has been prepared and the same plan will be implemented by the project implementing agency with the coordination of District Authorities to minimize the damage. The risk assessment and disaster management plan is detailed in Chapter 7 of the EIA report.

### **8.0 Project Benefits**

Mining is back bone of infra-structure development of country. Proposed project has following benefits as given below:

- Employment for local people
- Revenue for the State Government in form of excise duties, GST, taxes, levies etc.
- Generate business opportunity for the people
- Need based funds will be used for welfare of people in villages
- EMP funds will improve environmental quality.
- The operation of the Riverbed Sand mining would help to improve socio-economic condition of people in villages through separate fund allocated for Need Based Activity.

## 9.0 Budget for Social Development

The total estimated cost of the project is 45.45 lacs . Rs 1,13,000/- lac will be allocated for Need based activity for causes of village for drinking water, sanitation, education, health.

## 10.0 Environment Management Plan (EMP)

The detailed Environment Management Plan has been prepared based on the mining activities and the impacts imparting on land/soil, air, noise, water by the activities. The EMP and the cost for the environment protection measures are detailed in Chapter 10 of EIA report..

### Expenditure Proposed for Environmental Protection Activities:

S.No.	Particulars	Malpuri Sand Mine	
		Capital Cost in Rs	Recurring Cost in Rs
1	Air Pollution Control	-	72,000
2	Green Belt Development	3,05,400	2,70,000
3	Maintenance of Road	-	1,00,000
4	Facilities for Mine workers	50,000	1,08,000
	<b>Total ::</b>	<b>3,55,400</b>	<b>5,50,000</b>
	<b>Total Capital Cost in Rs</b>	<b>3,55,400</b>	
	<b>Total Recurring Cost in Rs</b>	<b>5,50,000</b>	
	<b>Total Cost of EMP in Rs</b>	<b>9,05,400</b>	

## 11.0 Conclusion

As discussed, it is safe to say that the collection of minor minerals from the proposed lease area is not likely to cause any significant impact on the ecology of the area as the mineral is and waste generated is non-toxic and does not harm the surrounding environment.

Adequate measures will be taken to control the fugitive emissions to be generating during mining operation. Socio-economic condition of the surrounding villages will improve in long run due to involvement of local population and improvement of infrastructure facilities. Green belt development in the statutory boundary, approach roads, schools are proposed with the participation of local people. This proposed plantation in the area will improve the aesthetic look along with betterment of ecology and environment of the locality.