

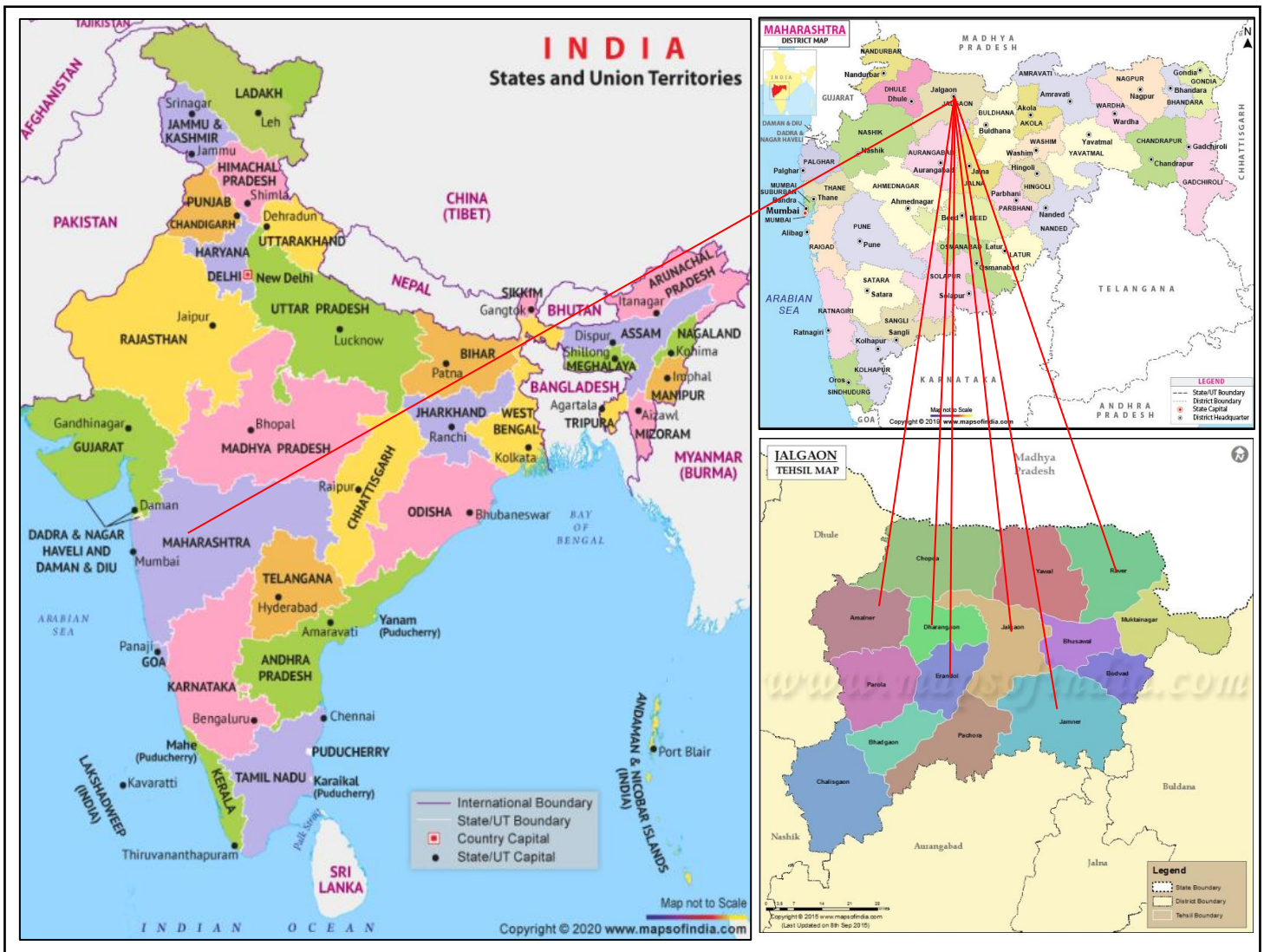
**Public Hearing of 15 sand spots of Amalner, Dharangaon, Erandol, Jamner, Jalgaon and Raver Talukas in Jalgaon District, Maharashtra.**

**EXECUTIVE SUMMARY**

**1. INTRODUCTION**

- ❖ Environmental Clearance is sought fifteen (15) sand spots of Amalner, Dharangaon, Erandol, Jamner, Jalgaon and Raver Talukas in Jalgaon District, Maharashtra.
  - ❖ M/s. Integrated Precision Systems & Services Pvt. Ltd., was awarded work to obtain Environmental Clearances for Sand Spots of Jalgaon by Collector Office, Jalgaon.
  - ❖ Mining plans for the above Sand Ghats have been approved by the Directorate of Geology and Mining (DGM), Nagpur on 1<sup>st</sup> November 2023.
  - ❖ Application in Form-1M, PFR, EMP, RA, DSR along with Approved Mining Plans for Sand Spots will be submitted along with Public Hearing Proceedings for Environmental Clearance.

**2. LOCATION MAP**



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**3. List of Proposed Sand Mines:**

S.No	Name of Village /Sand Ghat	Taluka	Name of The River	Gat. No. / Survey No. / Khasra No. Etc.	Length x Width x Depth (m)	Total Area in Ha.	Available Sand in Brass
1	Dhavade	Amalner	Tapi	247 & 260	250*40*3	1	3534
2	Hingone Sim Pra.Jalod	Amalner	Tapi	6 & 7	500*70*2.5	3.5	6184
3	Savkheda	Amalner	Tapi	8, 9 & Out of 10	250*40*3	1	3534
4	Narne	Dharangaon	Girna	Out of 6	300*42*2.5	1.26	2226
5	Avhani	Dharangaon	Girana	175, 167, 166, 165, 163, 162 & 160	1000*20*2.5	2	3534
6	Babhulgaon - 1	Dharangaon	Girana	9, 11, 12	360*43*2.5	1.548	2735
7	Babhulgaon - 2	Dharangaon	Girana	22, 23 & 24	490*28*2.5	1.372	2424
8	Utran A.H. Part-2	Erandol	Girana	9	370*70*2.5	2.59	4576
9	Hanmantkhede Sim Part-1	Erandol	Girana	1 to 5, 13, 14 & 19	380*65*2.5	2.47	4364
10	Takarkhede Part-1	Erandol	Girana	1, 2, 3, 4	255*55*2.5	1.4025	2478
11	Dev Pimpri - Kumbhari Sim	Jamner	Waghur	Dev Pimpri - 416, 420, 418, 415 Kumbhari Sim - 34, 35, 26, 25, 12 & 13	500*50*2.8	2.5	7067
12	Fupanagari	Jalgaon	Girana	66 & 67	605*80*2.5	4.84	8551
13	Dapore	Jalgaon	Girana	1 & 2	220*75*2.5	1.65	2915
14	Pilkhede	Jalgaon	Girana	3 & 6	162*89*2.5	1.4418	2547
15	Dodhe	Raver	Girana	4/1, 5, 10, 14, 15, 23/1 & 24	500*50*2.5	2.5	4417

**4. MINING METHODOLOGY:**

- Method of Mining:** Opencast manual method without drilling & Blasting. Only manual labor with hand tools such as spade, Ghamela, will be used. Excavation of sand from dry riverbed only.
- Machinery / Equipment's required:** Spades, Ghamela, Tractor with trolley.
- Transportation:** By tractor trolley from sand spot to stock yard & to consumers.
- Reclamation:** Mined out area will be replenished automatically after monsoon. Plantation will be carried out along river bank and along transport road.

**5. ENVIRONMENTAL MANAGEMENT PLAN**

**a. Air Pollution Control Measures**

- Periodic water sprinkling on kutchra road used for sand transport.
- Transport of sand by tractor trolleys trucks covered with tarpaulin.

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- Spillage of sand during transport shall be prevented by proper sealing of gaps.
- Plantation will be carried out along river banks and on free spaces near sand spot.

**b. Noise Control Measures**

- Mining and sand transport will be carried out during day time only.
- Only noise due to sand transport is expected
- Periodic maintenance of sand transportation vehicles will be ensured to minimize noise
- Speed of sand transport vehicles will be regulated.

**c. Water Pollution Control Measures**

- Sand mining will be carried out in dry river bed only.
- Depth of the mine pit will be maintained above river water level.
- River streams will not be diverted to form inactive channels.
- Washing of vehicles in the river will be prohibited.
- No effluent will be generated from mining activities.
- Provision of mobile toilets for workers.
- Mining will be avoided during monsoon and floods this will allow the sand deposit to replenish.

**d. Land Environment**

- Sand mining will create temporary pits in the dry river bed, which will be replenished during monsoon.
- Safety distance of 3 meter or 1/10th of the width of the river whichever is more will be left from both the bank of the river (as per “Sustainable sand mining guidelines”).
- Waste material like polythene bag, jute bag, etc. will not be allowed to remain/ spill in river bed.
- Mining will not exceed beyond the allowed extraction capacity.
- Plantation will be developed along river bank and nearby free spaces.

**6. GREENBELT DEVELOPMENT PLAN**

<b>Location of greenbelt</b>	On the banks of both sides of the lease boundary & Haul Road outside riverbed
<b>Spacing of plants</b>	4 m grid interval
<b>Species selected</b>	Native species

**Tree species recommended for Plantation.**

<b>Botanical name</b>	<b>Local name</b>	<b>Importance</b>
<i>Azadirachta indica</i>	Neem	Neem oil & neem products

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<i>Tectona grandis</i>	Teek	Antibacterial, Antifungal, Antiulcer
<i>Bambusa vulgaris</i>	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

**7. OCCUPATIONAL HEALTH SAFETY MANAGEMENT**

- Mine operators will be provided with personal protective equipment's.
- Safety helmets and footwear, in addition to ear, eye, and hand protection devices.
- Dust masks will be provided for workers.
- Potable drinking water shelter for mine workers will be provided.
- First aid kit will be provided at the mine site.

**8. CONCLUSION**

- Applied for fifteen (15) sand spots of Amalner, Dharangaon, Jamner, Jalgaon and Raver Talukas, Jalgaon District, Maharashtra falls under B2 category as per MoEFCC guidelines.
- Quarries are not likely to cause significant impact on the environment due to small scale of mining and will prove beneficial to the nearby community.
- The proposed project would provide indirect employment opportunities to local residents.
- The proposed project will also make a positive contribution to social infrastructure and overall development of the region.
- All environmental issues like air, water, noise, soil, solid waste management etc will be dealt as per the MoEF&CC guidelines.

**APPENDIX VIII  
(See paragraph 6)**

**FORM 1 M**

**APPLICATION FOR MINING OF MINOR MINERALS UNDER CATEGORY 'B2' FOR LESS THAN AND EQUAL TO FIVE HECTARE**

**(I) Basic Information**

(i) Name of the Mining Lease site: Avhani Sand Spot

(ii) Location / site (GPS Co-ordinates):

<b>Boundary Points Avhani</b>	<b>LATITUDE</b>	<b>LONGITUDE</b>
<b>BP1</b>	21° 3'43.81"N	75°30'24.96"E
<b>BP2</b>	21° 3'44.21"N	75°30'24.41"E
<b>BP3</b>	21° 3'51.87"N	75°30'30.66"E
<b>BP4</b>	21° 4'0.94"N	75°30'30.20"E
<b>BP5</b>	21° 4'4.89"N	75°30'26.60"E
<b>BP6</b>	21° 4'5.17"N	75°30'18.24"E
<b>BP7</b>	21° 4'5.82"N	75°30'18.27"E
<b>BP8</b>	21° 4'5.52"N	75°30'26.94"E
<b>BP9</b>	21° 4'1.19"N	75°30'30.88"E
<b>BP10</b>	21° 3'51.66"N	75°30'31.37"E

(iii) Size of the Mining Lease (Hectare): 2HA

(vi) Capacity of Mining Lease (TPA): 3533 Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 21.20 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, Maharashtra

**(II) Environmental Sensitivity**

*Avhani sand spot over an extent of 2Ha At Girna River Bed Gut No. 175, 167, 166, 165, 163, 162 & 160, Avhani Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.*

Form 1M

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S. No.	Areas	Distance in Kilometer/Details
1	Distance of project site from nearest rail or road bridge over the concerned River, Rivulet, Nallah etc.	Bridge on SH-14, 8.65Km, NW
2	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road Any Other Road Electric transmission line pole or tower Canal or check dam or reservoirs or lake or ponds In-take for drinking water pump house Intake for Irrigation canal pumps	Jalgaon Railway station, 9.5 Km, S No NH SH, 3.47Km, SW 1.1Km, SW 1.24Km, SW ET, 0.86Km, SW Nil Nil Nil
3	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil
4	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Water bodies: this is the case of river sand mining in Girna River bed; RF,9.45Km, SW
5	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil
6	Inland, coastal, marine or underground waters	Girna River bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	No NH SH, 3.47Km, SW 2.25Km, SW
9	Defense installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Jalgaon, 2.2Km, S
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Avhani ZP School 2.21Km, S Navjeevan Hospital, 9.2 Km,NW

12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Girna River Bed ( this is the case of river sand mining) RF,16.8Km, SE
13	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil
14	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	The mine lease area falls in Seismic Zone III (Moderate), according to the Indian Standard Seismic Zoning Map.
15	Is proposed mining site located over or near fissure / fracture for ground water recharge	No
16	Whether the proposal involves approval or clearance under the following Regulations or Acts, namely:- (a) The Forest (Conservation) Act, 1980; (b) The Wildlife (Protection) Act, 1972; (c) The Coastal Regulation Zone Notification, 2011. If yes, details of the same and their status to be given.	No
17	Forest land involved (hectares)	Nil
18	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Orders or directions of the Court, if any, and its relevance with the proposed project.	Nil

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**Environmental Management Plan**

**1. Introduction**

Ministry of Environment and Forest (MoEF) Notification 2006 and Sustainable Sand Mining Management Guidelines 2016 and as per provision in Mines and Minerals (Development and Regulation) Act 1957 Schedule 60 section 15, Govt Of Maharashtra makes a Minor Mineral Extraction Rules 2013 to extract all the minor mineral in scientific way so that there is no adverse impact on Environment and Climate. To extract every minor mineral from any land (either Government or Private) there is provision of mining plan which is approved by competent authority; For long term leased minor mineral (5 – 10 years period) and Sand excavation from river bed, Senior Deputy Director of Directorate of Geology and Mining is a Competent authority, for short term Temporary permits which is valid for one year, Committee headed by Hon. Collector is Final authority to Approved the District Mining Plan.

As per Minor Mineral Extraction Rules 2013 Rules 70, Disposal of sand from Riverbed, Nallah and creeks by way of public auction, in this regards Govt resolution Gaukhni -10/0615/case No. 289/kha dated 3rd January 2018 is applicable in entire state. As per Enforcement & Monitoring Guidelines for Sand Mining 2020 Sustainable sand mining management guidelines 2016, Standard Environment condition for sand mining and sustainable mining practices, district level survey report should be prepared and area suitable for mining and area prohibited for mining be identified.

**2. Project Description**

- Avhani is a small Village in Dharangaon Taluka in Jalgaon District of Maharashtra State, India. It comes under Avhani Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 7.4 KM from District headquarters Jalgaon. The Sand Ghat is 352 KM from State capital Mumbai.
- The sand spot area is connected to approach road at a distance of 959 m in West direction. Dharangaon Railway Station is present at a distance of 24 km.
- Area covered in SOI Toposheet No- 46O/12. The GPS reading of boundary point are given below:

**Table 1: Salient Features of the Project**

Items	Details
Location	Village- Avhani, Tehsil- Dharangaon District-Jalgaon, Maharashtra.



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Latitude and Longitude	Boundary points of Avhani	Latitude	Longitude
	BP1	21° 3'43.81"N	75°30'24.96"E
	BP2	21° 3'44.21"N	75°30'24.41"E
	BP3	21° 3'51.87"N	75°30'30.66"E
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	BP8	21° 4'5.52"N	75°30'26.94"E
	BP9	21° 4'1.19"N	75°30'30.88"E
	BP10	21° 3'51.66"N	75°30'31.37"E
Sand spot area (In Ha)	2		
Proposed production capacity (In Brass)	3534		
Manpower Requirement (considering 3-month period)	30 labors + 1 mate + 1 Supervisor=32 manpower		
Infrastructure Requirement (As per Govt Resolution 3rd January 2018)	1. Room / Hut for Official records 2. Electricity / Battery for Running CCTV on 24X 7 daily. 3. One Computer / Android base Mobile for the online generation of Invoice number.		
Water requirement & source	2.6 KLD – Tankers from nearby village.		
Project cost INR (Lakh)	21.20 Lakhs		

### 3. Baseline Environmental Status

#### ❖ Topography

- The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west.

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- However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
  - South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys.
  - The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
  - The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Erandol, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Raver, Chopda, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Erandol, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.
  - The slope of Sand Spot area is towards West side ranging from Contour 170 to 172 from MSL i.e 2m. The Highest contour value is 172 and lower is 170. The flow direction of Girna river is towards West.

❖ **Hydrology**

They will be no change in water table during mining operation, as the depth of mining shall be restricted to 1m water level, which is less likely to affect surface level or ground water table. There is no proposal of any stream modification/diversion due to this mining activity hence there will be no impact on flow of water.

❖ **Soil Environment**

The area is not having any topsoil or fertile soil. The depth of mining shall be restricted to 1m. There is no major impact on soil of the study area due to mining activities.

❖ **Land Use Land Cover**

The project area does not consist of any forest land. It does not consist of any human habitations. Any change in scope of mining as per approved mining plan can lead to bank erosion /cutting and thereby river channel shifting degradation of land, causing loss of properties and degradation of surrounding landscape.

❖ **Water Environment**

- There will not be any wastewater discharges to water bodies from the mining operations. As observed in the river, the thickness of sand to be excavated will be 0.5m only so there will not be any intersection with ground water table. It is observed from the dug well in the

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adjacent plain area and in the nearby villages that the ground water table varies depending upon seasonal variations. The depth to water levels in the district ranges from 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 0.5m that too within the river course and the total mining operation will be achieved through manual means, there will be no effect on ground water table. All the stipulations of MoEF for sand mining and guidelines as per the Maharashtra Minor Mineral Extraction [Development and Regulation] Rules, 2013 of Section 15 of MMDR Act 1957 [67 of 1957] will be followed. Hence, impact on water regime due to the proposed sand mining is not anticipated.

- As the mining activities presently proposed are maximum up to 1m that too within the river course and the total mining operation will be achieved through manual means, there will be no effect on ground water table. All the stipulations of MoEF for sand mining and guidelines as per the Maharashtra Minor Mineral Extraction [Development and Regulation] Rules, 2013 of Section 15 of MMDR Act 1957 [67 of 1957] will be followed. Hence, impact on water regime due to the proposed sand mining is not anticipated.
  - Precautionary measures will be initiated for closing the operation and shifting the men and transport vehicles prior to onset of monsoon.
  - No oils or lubricants will be discharged in the sand to avoid water pollution.

❖ **Climate**

The climate of this district is generally dry except in the monsoon. The year may be divided into four seasons. The cold season from December to February is followed by the hot season from March to May. June to September is the monsoon season and October and November form the post-monsoon season.

❖ **Biological Environment**

The project is only of extraction of minor minerals viz. sand from the river quarry.

Flora: The area is completely barren and devoid of any vegetation in the river. Only few thorny bushes are seen on the banks of the river.

Fauna: As there is no forest cover, no wildlife can be seen in this area.

- There will be no significant impact of the river quarry mining project on the biological diversity found in the 5km. radius of the site.
- The mining lease area is in non-forest land i.e., sandy river quarry where presence of fauna is not at all seen. As such, there will be no adverse impact of the manual mining activity on fauna around the mining lease area.
- No adverse impacts will be envisaged on the existing aquatic fauna, on downstream side (away from site) as the mining confined to above water level only and at all touching/disturbing water table.

❖ **Socio-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- The mining operations will provide direct & indirect employment village people.
- The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.

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- Local work force will be given first preference for employment.
  - Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area)

**4. Impact assessment report along with proposed mitigation measures.**

Preparation of Environmental Management Plan is required for formulation, implementation, and monitoring of environmental protection measures during and after commissioning of projects. The plan should indicate the details as to how various measures have been proposed to be taken including cost components as may be required.

**1. Land Environment**

The type of mining and the characteristics of the mineral deposit both affect the degree to which mining disturbs the landscape. Sand Mining and allied activities will be done in the fluvial plain formed by river meandering. Mining of sand may cause a few environmental degradations.

**a. Anticipated Impacts:**

- ❖ Damage of riverbank due to access ramps to riverbed, may cause soil erosion.
- ❖ Destruction of riverbank hinterland and ecological due to extraction of sand by probability of damage to the flood control bunds (built along the river side) due to heavy movements of vehicles over the bund to approach the mine area and further during transportation for sand from the mine area.
- ❖ Disposal of packing material, carried by the workers, would not be allowed. This packing material would include used sachet/ gutka /pan masala pouches.
- ❖ Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations, borehole users due to dust, noise and it also causes traffic hazards.
- ❖ Surface degradation due to road network.

**b. Mitigation Measures:**

- ❖ Safety distance of 3 meter or 1/10th of the width of the river whichever is more will be left from both the banks of the river (as per "Sustainable sand mining guidelines").
- ❖ No foreign material like polythene bag, jute bag and useless articles should be allowed to remain/spill in riverbed and catchment area, or no pits/pockets will be allowed to be filled with such material.
- ❖ Minimum number of access roads to riverbed for which cutting of riverbanks will be avoided and ramps are to be maintained.
- ❖ Care will be taken to ensure that ponding is not formed in the riverbed.
- ❖ Mining will not exceed beyond the allowed extraction capacity.
- ❖ Green belt will be developed along the haul road and the bank of rivers of mine premises and near the sand mining site. While selecting the plant species, preference will be given for planting native species of the area.

**2. Water Environment**

**a. Anticipated Impacts:**

- ❖ As the project activity is carried out in the dry part of riverbed, none of the project activities will affect the water environment or riverbank habitats. Project activities will not have any adverse effect on the physical components

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of the environment and therefore may not have any effect on the recharge of ground waters or affect the water quality. Monitoring of water quality will be checked yearly.

**b. Mitigation Measures:**

- ❖ Mining is avoided during the monsoon season and at the time of floods. This will help in replenishment of sand in the riverbed.
- ❖ Mining below subterranean water level will be avoided as safeguard against environmental contamination and over exploitation of resources.
- ❖ River stream will not be diverted to form in active channels.
- ❖ Utmost care will be taken to minimize or control leakage vehicles to be used for sand transportation.
- ❖ The washing of tractor trolleys in the river will be avoided.
- ❖ The contractor will follow all guidelines and rules for proper and scientific method of mining during the period of extracting the sand.

**3. Air Environment:**

**a. Anticipated Impacts:**

**Due to Haul Road/ Access Road:**

- ❖ Plying of tractor trolleys from public road to river sand collection points needs access roads.
- ❖ Majority of such access roads are the same existing roads/tracks being used by pedestrians/cart owners. Movement of heavy vehicles sometimes causes problems to cattle, agriculture land, and human habitations due to dust, noise and movement of public.
- ❖ These environmental problems are felt more as the area is rural in nature.

**Due to Mining process:**

- ❖ Air pollution is likely to be caused at various stages of sand mining operations such as excavation, loading & transportation of material.
- ❖ Most of the dust will be generated from loading& transportation. This dust becomes air borne and gets carried away to surrounding areas.
- ❖ The impact on air is mainly localized in nature as the dust particles are not carried to longer distances and the effect is felt within the core zone of the project involving active Sand mining operations.

**b. Mitigation Measures:**

**Mitigation of Impacts on Access Roads:**

- ❖ Movement of the vehicles on the road will be increased; however, unmetalled road in the mining area will be sprinkled with water at regular intervals.
- ❖ In addition to prevent spillage by tractor trolleys over loading should be controlled along with speed limit (1Brass /tractor trolley).
- ❖ Maintenance of haul road will be done on regular basis.

**c. For Fugitive Dust Emission:**

- ❖ To avoid fugitive dust emissions at the time of excavation, regular sprinkling of water will be done on regular basis.
- ❖ Sand is transported to the sites by road through tractor trolleys. The sand carrying vehicles shall be covered by tarpaulin sheets.
- ❖ The Green Belt development will be prepared along the haul roads, which will act as a pollution sink.

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- ❖ To minimize the vehicular pollution from the sand transporting vehicles, the following conditions will insist to permit the vehicles of the transporters.
- ❖ The vehicles should be (Bharat-IV stage) compliant and should have pollution control certificate (PUC) issued by appropriate authorities.
- ❖ Regular maintenance of transport vehicles and monitoring of vehicular emission levels at periodical intervals.

**4. Noise:**

**a. Anticipated Impacts:**

Noise environment in this project will be affected only by the equipment at the site and vehicular transportation. Since slight increase in noise levels can be expected.

**b. Mitigation Measures:**

- ❖ Minimum use of Horns at the village area.
- ❖ Timely maintenance of vehicles and their silencers to minimize vibration and Sound.
- ❖ Phasing out of old and worn-out tractor trolleys.
- ❖ Provision of green belts along the road networks.
- ❖ Care will be taken to produce minimum sound during sand loading.
- ❖ Use of Backhoe and ear plugs may be provided to protect the labors working at the site.

**5. Socio-Economic Environment**

This project operation will provide livelihood to the poorest section of the society.

**Anticipated Impacts and Evaluation:**

- ❖ The project activities shall not have any adverse impacts on any of the common property resources of the village communities, as the sand mine lease area is not being used for any purpose by any section of the society in this region.
- ❖ There is no R & R involvement in this project.
- ❖ There is no land acquisition in this project.
- ❖ The results of the field survey conducted to understand the knowledge and perception of the people living around the project area gives a clear idea about the need for the project.
- ❖ A major portion of the houses in the study area are semi- pucca type structures.
- ❖ The water source to these areas is from the municipal connection and private bore wells and wells. The awareness level regarding the proposed mining activity is very high. The proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes.

**a. Social and Demographic Profile:**

The workers are from local villages. These people have been provided all welfare from a lessee like medical benefits, insurance, fees for children's education etc. They have some land and cattle for their daily earnings. Additional income earned from the Sand Mining work will improve their living standard. The group of quarries in and around will help to have infrastructure facilities like roads, schools, shops etc. This will improve their social life.

**b. Occupational Health and Safety:**

**Avhani sand spot over an extent of 2Ha At Girna Riverbed Gut No.175, 167, 166, 165, 163, 162 & 160, Avhani Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

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This is Riverbed Sand Mine. So, the mining activities are comparatively less because the production is not on large scale. Workers do not come across any extreme condition like excessive heat, moisture etc. Workers working around it may come across this dusty environment. But the impact on health will be within limit.

**c. Human Settlement:**

There are no houses in and around lease area. Blasting is only activity, which may affect the settlement, but settlement is at distance of more than 1.0 Km from the Sand Mining. All the due precautions will be taken during mining. Transport of finished products is through the villages. There will be psychological impact of the traffic on the local people. However, the intensity of traffic is less.

**d. Health and Hygiene:**

e. In general, the health of villagers is moderately good. In the rainy season, the atmospheric condition is unhygienic due to lack of proper drainage and sanitation in the village habitation. Villagers are working in agricultural fields and work as laborers.

**f. Education:**

Mostly education is up to middle standard. Economic condition is in general moderate. So, after this project the standard of education will be increase.

**g. Socio Economic Benefits Arising Out of Mining:**

- a. Generation of employment in the rural area.
- b. Improvement in the living standards of the rural people.
- c. Creating of infrastructural facilities like roads, electricity, shops, school etc.
- d. Helping to improve literacy in the area Exploiting natural mineral so generation of revenue.
- e. Helping to sustain construction activity.
- f. Improving the greenery of the area, this is otherwise poor.

**h. Liquid Effluent:**

Not applicable because small mine and impacts are negligible.

**i. Solid Waste:**

Not applicable because small mine and impacts are negligible.

**6. Biological Environment**

**Anticipated Impacts:**

- ❖ Aquatic environment Proposed mining of the dry bed of the river, so no possibility of disturbance of aquatic life.
- ❖ Flora and Fauna, the mining activity will have insignificant effect on the existing flora and fauna. The project area is surrounded with agricultural land. It was found that the sand mining activity will not have any significant impact on the biological environment of the region.

**Mitigation Measures:**

- ❖ Improvement in riverbank stability.
- ❖ Large woody debris in the riparian zone will be left undisturbed or replaced when moved and not be burnt.
- ❖ Vegetative debris will not be stored within the mine lease area.
- ❖ Operation and storage of heavy vehicles within riparian habitat will be restricted.
- ❖ Covering of loaded vehicles to reduce dust emission, which may harm surrounding agricultural crops and other plant species conservation of biological diversity of plants, birds, and animals.

**Avhani sand spot over an extent of 2Ha At Girna Riverbed Gut No.175, 167, 166, 165, 163, 162 & 160, Avhani Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

- ❖ Greenbelt Development and Bio-Diversity Preservation Plantation activities will be carried out at the bank of the river and along the haul roads. This activity will help for maintaining ecology and environment of the area.

**5. Project Benefits**

The proposed expansion project will lead to the following benefits:

- Sand is available for Building and Construction work and by regular removal of sand there is no possibility of flood.
- This project will contribute additional revenue to the state Exchequer in the form of revenue.
- The project will result in the employment opportunities to the unskilled/skilled local people.

Thereby, the quality of life of the employed people will increase.

**6. Sand Ghat Closure Plan**

- ❖ Mining will be avoided during monsoon and floods; this will allow the sand deposit to replenish.
- ❖ Gabion structure will be constructed for the sand to replenish during monsoon season.

S. No	Head	Area put on. use at start of plan [in Ha]	Additional Requirement during Plan period [in Ha]	Total [in Ha]	Area considered as	Net consider for calculation
1	Area under mining / pit	-	2.0	2.0	2.0	2.0
2	Area under dump	NIL	---	---	---	---
3	Infrastructure Workshop Administrative Building etc.	--	--	--	--	--
4	Roads	--	--	--	--	--
5	Mineral reject	--	--	--	--	--
6	Green Belt Plantation /Soil dump	--	--	--	--	--
7	Tailing Dam /pond	--	--	--	--	--
8	Effluent Treatment Plant	--	--	--	--	--
9	Mineral storage	--	--	--	--	--
10	Township area	--	--	--	--	--
11	Other to specify	--	--	--	--	--
<b>GRAND TOTAL</b>			<b>2.0</b>	<b>2.0</b>	<b>2.0</b>	<b>2.0</b>



**Avhani sand spot over an extent of 2Ha At Girna Riverbed Gut No.175, 167, 166, 165, 163,  
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Environmental Management Plan**

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**7. Planning Brief**

Information required on demand and supply of district (2023-24)			
S.No.	Name of District	Total sand Demand of District in Brass	Total Sand Available in district in Brass
1	Jalgaon	191380	104531

**8. Compliance of Earlier Environmental Clearance**

Avhani sand spot of Avhani village of Dharangaon tehsil has got environmental clearance in the year 2020-2021 but the sand ghat did not get a response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot.

**9. Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020.**

- ❖ District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- ❖ Appropriate feedback and its redressal mechanism shall also be made operational.
- ❖ Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- ❖ Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- ❖ The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- ❖ Printed on Indian Bank Association (IBA) Approved
- ❖ Magnetic Ink Character Recognition Code (MICR) paper
- ❖ Unique Barcode
- ❖ Unique Quick Response Code (QR)
- ❖ Fugitive Ink Background
- ❖ Invisible Ink Mark
- ❖ Void Pantograph
- ❖ Watermark
- ❖ GPS BASED VEHICLE TRACKING SYSTEM
- ❖ CCTV Camera

**Avhani sand spot over an extent of 2Ha At Girna Riverbed Gut No.175, 167, 166, 165, 163, 162 & 160, Avhani Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.**

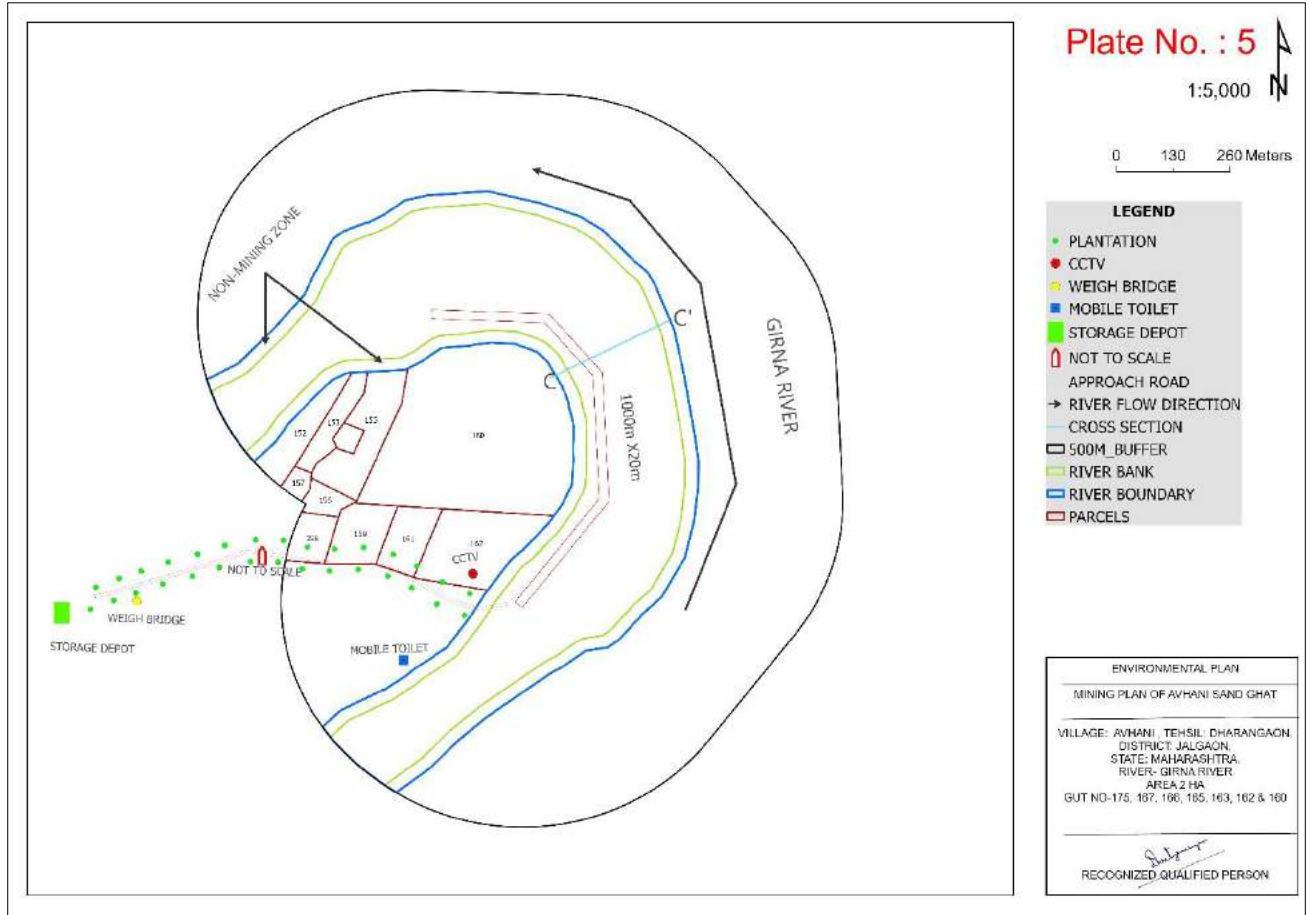
**Environmental Management Plan**

Cluster certificate with reference to the EIA Notification 2006 amended from time to time with specific remarks on the cluster formation in the periphery of the proposed sand ghat along with area map showing distances between adjoining sand mine areas.

Avhani does not form a cluster.

**10. Layout of proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc.**

Proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc. layout is given below:



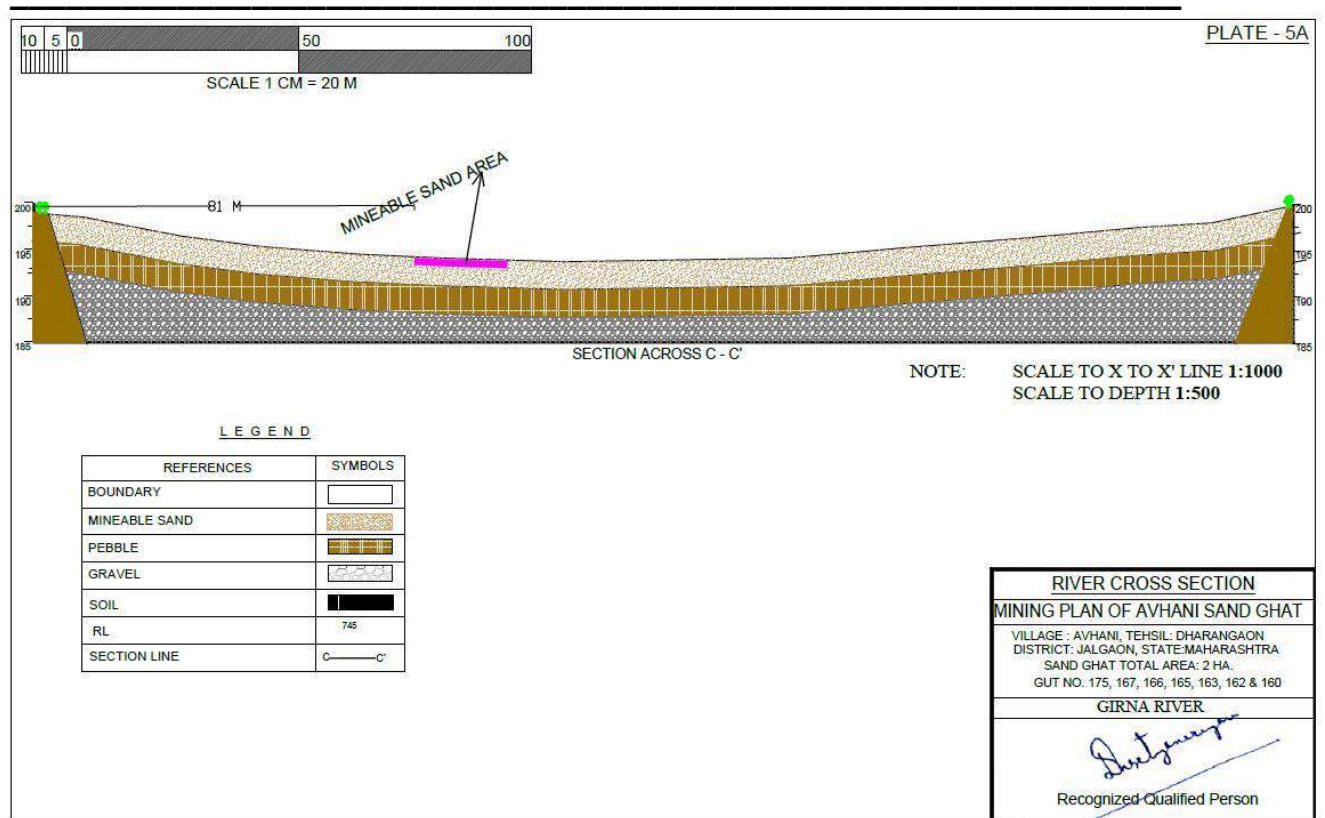
**11. Proposed approach road for transport of mined sand from sand ghat to the storage area and consent of storage area from the concerned landowners is an after-auction activity to use their land as approach road.**

The proposed approach road length is at 959m, and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the riverbank. Consent of road submitted by Dharangaon Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from landowner.

**12. Cross -Section of riverbed showing distance of proposed sand mine area from the riverbank and other details as prescribed in the Enforcement & Monitoring Guidelines for sand mining published in January 2020 by MoEF&CC.**

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**Environmental Management Plan**

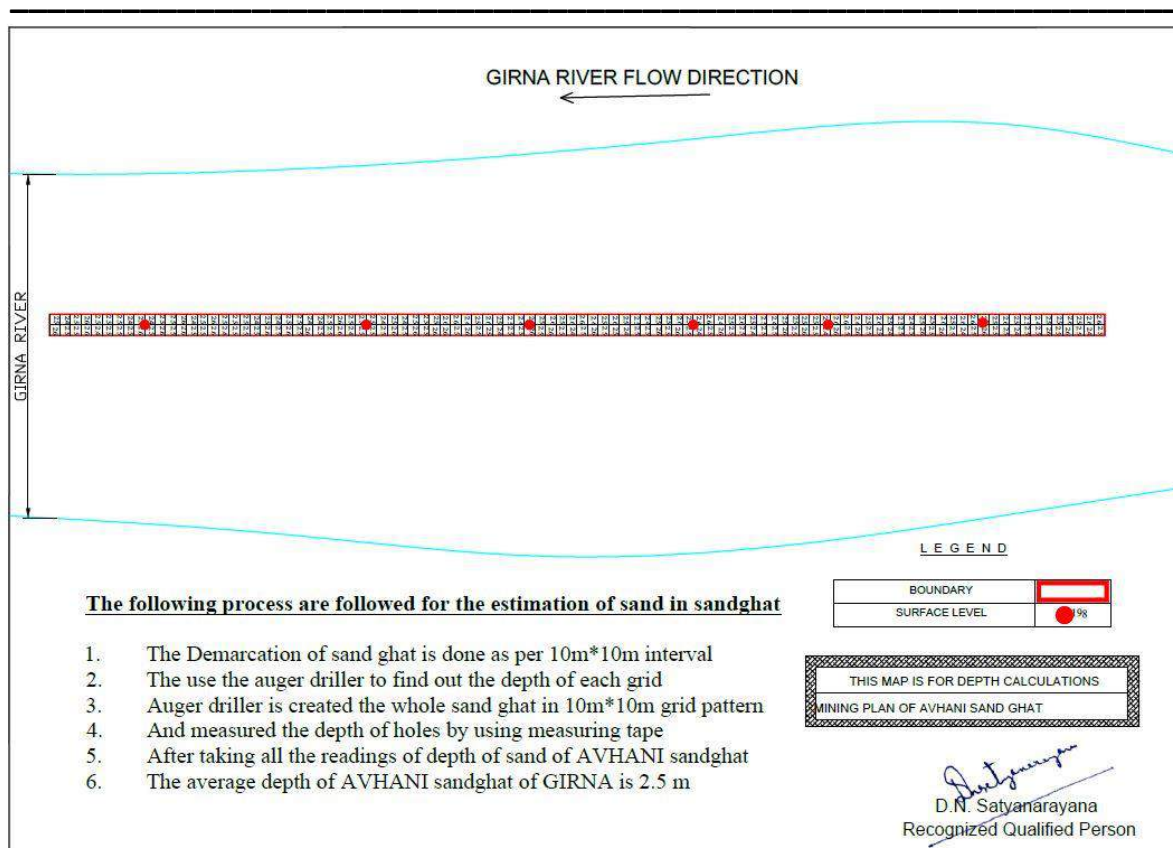


**13. Details of District Level Task Force committee meetings and status of compliance of its recommendations if any.**

**14. Methodology for Sand Mining**

**Avhani sand spot over an extent of 2Ha At Girna Riverbed Gut No.175, 167, 166, 165, 163, 162 & 160, Avhani Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.**

**Environmental Management Plan**



**15. Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.**

**DANDY-BOLTON EQUATION**

For Runoff Less Than 2 Inches

$$S = *1280 * (Q) * 0.46 * (16 - 0.26 \log(A)) * F$$

For Runoff More Than 2 Inches

$$S = *1958 * (Q) * (e^{-0.055 * Q}) * (13 - 0.26 \log(A))$$

Where?

S=sediment yield of stream (t/yr./km<sup>2</sup>),

Q= average annual runoff (m<sup>3</sup>),

A= net drainage area in sq. Mile

The sediment yield of Girna river at Girna dam station is 4.612\*1020 tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation.

**Conclusion:**

As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**Avhani sand spot over an extent of 2Ha At Girna Riverbed Gut No.175, 167, 166, 165, 163,  
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**Environmental Management Plan**

**16. PP to submit details of proposed plantation plan along with its location and requisite permission to be obtained from the Competent Authority.**

Plantation details are presented below:

Location of greenbelt	Both sides of approach road, On the riverbanks of both sides of the sand spot & nearby open areas.  Haul Road outside riverbed.
No. of plants to be planted	1460
Spacing of plants	4 m grid interval
Species selected	Native species

Tree species recommended for Plantation:

Botanical name	Local name	Importance
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

**17. Budget for Corporate Environment Responsibility (CER)**

About 2% fund of the project cost is allocated for Corporate Environment Responsibility (CER) activities as presented in below Table:

S.No.	Budget Allocated	Budget (In INR)
1	Installation of one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	25000
3	Needed Repairing work with consultation of Grampanchayat	25000
4	Community Infrastructure Development	70000

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**Environmental Management Plan**

Total	2,00,000
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**18. Environmental Management Plan (EMP)**

A total capital cost of INR 3,95,000 and recurring cost provision of about INR 2,98,310 has been kept in the project cost towards the environmental protection, control and mitigation measures and implementation of the EMP, this cost is born by bidder / lease holder. The budgetary cost estimate for the EMP is given in Table.

**Table 6: Environmental Budget**

Avhani			EMP Budget		
SNo.	Component	Description	Capital cost Rs.	Recurring Cost Rs.	Total Cost in Rs
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	47950	47950
3	Approach Road Maintenance		-	38360	38360
4	Green Belt Plantation	Along the River Bank	125000	-	125000
		Along the Approach Road	240000	-	240000
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	5000	-	5000
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	30000	30000
7	Security	Display Boards and other security measures	10000	-	10000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health check-up (1000Rs./ Employee)	-	32000	32000
9	Tarpaulin Cover (5000 INR per one Cover)		15000	-	15000
<b>Total</b>			<b>395000</b>	<b>298310</b>	<b>693310</b>

**19. Public Consultation Report**

Dharangaon					
S. No	Villager Name/Village, Taluka	Type of Person (Villager/Government Official)	Query raised by the Villager/Official	Response from the Proponent	Action Plan

**Avhani sand spot over an extent of 2Ha At Girna Riverbed Gut No.175, 167, 166, 165, 163, 162 & 160, Avhani Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.**

**Environmental Management Plan**


**20. Summary and Conclusion**

The environmental status of the project site and study area of 10 km radius is delineated with respect to air, noise, water, land, biological and socio-economic environment the different project activities in the construction and operation phases are identified. To identify the impacts, the interaction between the project activities and different components of the environment are classified phase wise. A summary of the identified impacts is given in the following paragraphs.

During the operational phase, transportation of sand could cause a temporary disturbance to local environment which will be prevented with the proposed mitigation measures proposed in Point no. 4.

Proposed project will not have any major significant negative impacts. The minor impacts arising out during Excavation and Transportation phases can be mitigated with the help of the proposed Environmental Management Plan.

In general, Sand excavation from Avhani Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

**Avhani sand spot over an extent of 2Ha At Girna Riverbed Gut No.175, 167, 166, 165, 163, 162 & 160, Avhani Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.**  
**Prefeasibility Report**

The Avhani Sand Spot is situated at Village Avhani, Taluka Dharangaon, District- Jalgaon. Sand Spot is 2 HA of area in Gut No. 175, 167, 166, 165, 163, 162 & 160 of Avhani village of Dharangaon Tehsil, Jalgaon district. Detail of the summarised below,

- ❖ District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- ❖ District Collector Jalgaon appointed M/s Integrated Precision Systems & Services Pvt. Ltd., for preparation of Mining Plan and grant of environmental clearance.
- ❖ Applicant proposed to auction the said Sand Spot over an area of 2 Ha area and identified for preparation of mining plan and for grant of Environmental Clearance.
- ❖ Mining Plans are prepared by Recognized Qualified Person and approved by Directorate of Geology & Mining Govt. of Maharashtra.
- ❖ About 3534 brass sand is proposed to auction from proposed sand spot.
- ❖ Proposed site is located at the Girna riverbank.

### 1. Physiography

- The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west.
- However, the river banks are marked by erosion, forming gully and wasteland which inhabit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys.
- The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Erandol, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Raver, Chopda, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Erandol, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.
- The slope of Sand Spot area is towards West side ranging from Contour 170 to 172 from MSL i.e 2m. The Highest contour value is 172 and lower is 170. The flow direction of Girna river is towards West.

### 2. Local Geology

The local geology is Sand of various size up to depth of 2.5- 3 meter.



**Avhani sand spot over an extent of 2Ha At Girna Riverbed Gut No.175, 167, 166, 165, 163, 162 & 160, Avhani Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.**  
**Prefeasibility Report**

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**3. Details of Exploration**

- ❖ There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the riverbed.
- ❖ Mining - The mining will be continued with present method of open cast mining by cutting slice of 1 m of Sand along topo-relief, by advancing from NE to SW direction as per allotted area by auction. The production can be at the rate of 10000 Cu.m or 3534 brass i.e., 1 year from the date of mining plan approval, the size of pit at the end will be 1.49HA.

**4. Introduction of the project/ background information**

The Avhani Sand Spot has been kept for Auction, which is situated at Village Avhani, Taluka Dharangaon, and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

**5. Brief description of project**

- ❖ The Sand Spot has sufficient Reserve of Sand to work at 10000 Cu.m for a specified period mentioned i.e., 1 year from date mining plan approval.
- ❖ The mining will continue with opencast method of Mining by cutting 1 m area of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of labourers into the tractor having capacity of 1 Brass for transport of Sand-to-sand depot from there to the various dealer sites located outside Sand Spot area.

**6. Need for the project.**

The Sand or Sand Spot under reference is aimed at exploring Sand as ROM in various sizes i.e., fine to Coarse grain which is Transported to consumer site in outside Sand Spot area, for the infrastructure development i.e., Construction activity to produce Concrete for putting in the floor, roof- slabs, Column, Pillars, Bridges & Dam construction.

**7. Project Description**

This mining project is an independent project and not an interlinked project.

**8. Location**

- Avhani is a small Village in Dharangaon Taluka in Jalgaon District of Maharashtra State, India. It comes under Avhani Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 7.4 KM from District headquarters Jalgaon. The Sand Ghat is 352 KM from State capital Mumbai.
- The sand spot area is connected to approach road at a distance of 959 m in West direction. Dharangaon Railway Station is present at a distance of 24 km.
- Area covered in SOI Toposheet No- 460/12.

**9. The boundary pillars of Sand Spot area are given below with GPS values.**

Boundary points of Avhani	Latitude	Longitude
BP1	21° 3'43.81"N	75°30'24.96"E

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**Prefeasibility Report**

BP2	21° 3'44.21"N	75°30'24.41"E
BP3	21° 3'51.87"N	75°30'30.66"E
BP4	21° 4'0.94"N	75°30'30.20"E
BP5	21° 4'4.89"N	75°30'26.60"E
BP6	21° 4'5.17"N	75°30'18.24"E
BP7	21° 4'5.82"N	75°30'18.27"E
BP8	21° 4'5.52"N	75°30'26.94"E
BP9	21° 4'1.19"N	75°30'30.88"E
BP10	21° 3'51.66"N	75°30'31.37"E

**10. Alternate Sites**

No alternate site is proposed.

**11. Magnitude of Operation**

Proposed period for mining of sand will be decided by the office of district collectorate 10000 cu.m. will be excavated during the period.

**12. Project description-mining details**

- ❖ The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 1000m L X 20m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable.
- ❖ The Sand Spot has sufficient Reserve of Sand to work at 10000 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.
- ❖ The mining will continue with opencast method of Mining by cutting 1 m slice of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of laborer's into the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**13. Raw material, marketing & transport of ore**

The proposed sand spot will be auctioned, and successful bidder will be responsible for carrying out mining operations as per environmental terms and conditions, approved mining method as per approved mining plan and other terms and conditions. The loading of Sand generated to the tractor/tipper/dumpers will be done by loaders & material transported to the Dealer site.

**14. Resource optimization, recycle, reuse.**

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163, 162 & 160, Avhani Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.  
Prefeasibility Report**

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Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

**15. Water & energy requirement**

The major water requirement in the lease area is for dust suppression and for drinking use. The total water requirement is estimated as 4.4 KLD the required water for dust suppression can be arranged through tankers from nearby village and drinking water will be provided in earthen pots for labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

**16. Quantity of waste & scheme for management**

There will not be any waste generation within the lease area.

**17. Schematic Representations**

It is a proposal of opencast manual sand mining from riverbed. Mining plan is approved by the competent authority.

**18. Site Analysis**

**Connectivity**

Nanded is a small Village in Dharangaon Taluka in Jalgaon District of Maharashtra State, India.

The sand spot area is connected to approach road at a distance of 959 m in West direction. Dharangaon Railway Station is present at a distance of 24 km.

**19. Land Use, form & Ownership**

The ultimate land use pattern for the lease area of 1.49ha. will be consisting of

Mining Area : 2.0 ha.

Construction of Temporary Roads: 0.00 ha.

Total : 2.0 ha.

At present ownership of this sand spot area is in the hand of Govt. of Maharashtra, after approval of mining plan and EC quarry area will be transfer to bidder after auction.

**20. Geology**

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

**21. Existing land use pattern**

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

**22. Social-Economic Environment**

- ❖ Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:
- ❖ The mining operations will provide direct & indirect employment village people.

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- ❖ The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- ❖ Local work force will be given first preference for employment.
- ❖ Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area).

**23. Planning brief:**

The proposed project is opencast manual sand mining activity.

**Supply demand ratio:**

Information required on demand and supply of district (2023-24)		
Name of District	Total sand Demand of District in Brass	Total Sand Available district in Brass
Jalgaon	191380	104531

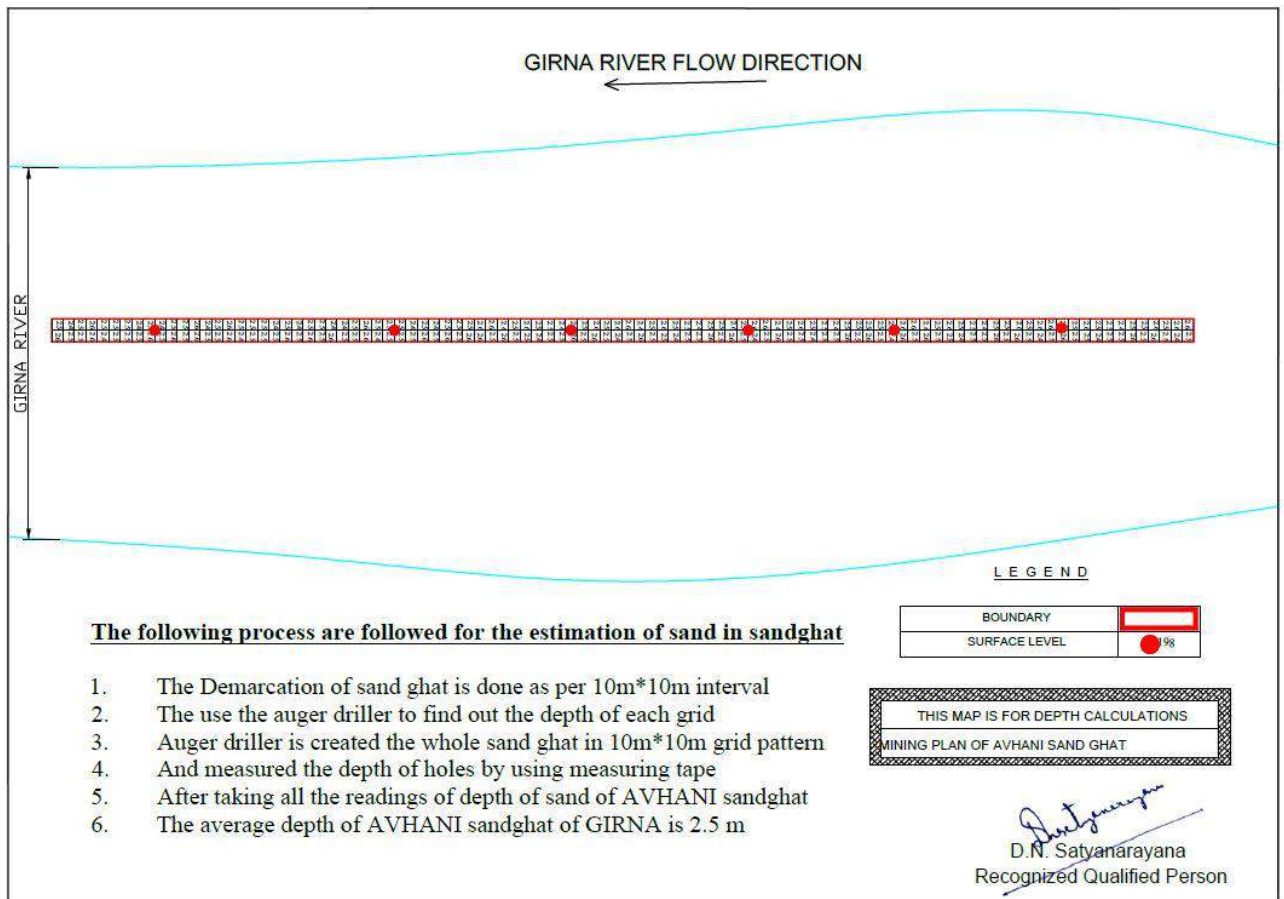
**24. Replenishment:**

- ❖ Area of deposition and erosion was calculated for each cross-section after giving due regard to stability & safety of active channel banks & other features of importance.
- ❖ DGPS and other survey tools have been used to define topography, contours and offsets of lease area.
- ❖ Contour & elevation benchmarks are provided with the baseline data for assessing pre- and post-study period scenario.
- ❖ Physical benchmarks are fixed at intervals (1 in 30 m) & Reduced Levels (RL) are validated from a nearby standard RL.
- ❖ These RL are engraved on a steel plate (Bench Plate) & are fixed & placed at locations which are free from any damages & are available in pre- and post-study period.
- ❖ Bench plates are available for use during the mining period as reference for all mining activity.
- ❖ Baseline data on elevation status for a grid of 10 m x 10 m is taken to ensure the accuracy in the assessment.
- ❖ It was made sure that two consecutive cross-sections in longitudinal and lateral direction is not more than 10-meter distance apart.
- ❖ Changes have been observed in the elevation in pre and post scenario at each node and were depicted in graphical forms with an appropriate scale for estimating the area of deposition & erosion.
- ❖ Elevation level was placed in reference to the nearest bench-plates established for the purpose.
- ❖ The levels (MSL & RL) of corner point of each grid were identified and safety barriers (non-Mining) are demarcated as restricted in consensus with Mineral Concession Rules of respective State, and the provision mentioned in this Sustainable Sand Mining Management Guidelines.
- ❖ A clear identification was highlighted between grids under mineable and grids under the non-mineable area. These baseline data (pre and post) was subjected to stimulation with the help of data mine software to derive at the replenishment area and corresponding volume and estimated weight.

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- ❖ The database was structured in a tabulated form clearly depicting the nomenclature of the section lines, latitude and longitude of the starting point, chainage and respective levels of all the points taken on that section line.
- ❖ Net area was derived after summation of area of deposition minus area of erosion for each cross-section.
- ❖ Volume was estimated by multiplying distance between two cross-sections with average of net area of these two consecutive cross-sections.
- ❖ One sample per 900 square meters (30 m x 30 m) was preferred for sample density for assessment of bulk density for estimation of deposition rate.
- ❖ Care was taken that the sample for assessment of bulk density is taken from the deposition zone & not from erosion.

25. Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.



**26. DANDY-BOLTON EQUATION**

For Runoff Less Than 2 Inches

$$S = 1280 * (Q)^{0.46} * (1.46 - 0.26 \log(A)) * F$$

For Runoff More Than 2 Inches

$$S = 1958 * (Q) * (e^{-0.055 * Q}) * (1.43 - 0.26 \log(A))$$

Where?

S=sediment yield of stream (t/yr./km<sup>2</sup>),

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Q= average annual runoff (m<sup>3</sup>),

A= net drainage area in sq. mile

The sediment yield of Girna river at Girna dam station is 4.612\*1020 tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation.

Conclusion:

As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**27. Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020**

- ❖ District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- ❖ Appropriate feedback and its redressal mechanism shall also be made operational.
- ❖ Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- ❖ Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- ❖ The recommendation may also include action under the provision of E(P) Act, 1986.

**28. It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:**

- ❖ Printed on Indian Bank Association (IBA) Approved
- ❖ Magnetic Ink Character Recognition Code (MICR) paper
- ❖ Unique Barcode
- ❖ Unique Quick Response Code (QR)
- ❖ Fugitive Ink Background
- ❖ Invisible Ink Mark
- ❖ Void Pantograph
- ❖ Watermark
- ❖ CCTV at mine lease site
- ❖ GPS Based Vehicle Tracking System
- ❖ The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided outside Sand Spot area.

**29. Compliance of earlier Environmental Clearance**

Avhani sand spot of Avhani village of Dharangaon tehsil has got environmental clearance in the year 2020-2021 but the sand ghat didn't get a response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot.

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**30. Proposed Infrastructure**

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided in outside Sand Spot area.

**31. R&R Plan**

R&R is not involved.

**32. Project schedule**

Period of mining for the proposed sand spot will be decided by the Office of District Collectorate.

**33. Analysis of Proposal**

Description of the project included in items 1-10 above indicates the following:

- ❖ It is proposed for opencast manual river sand mining.
- ❖ Opencast mining without hampering the present environmental quality of the area.
- ❖ Income to local people is uncertain & initiation of mining will ensure regular income to local people.

**34. Costing**

Costing parameters will be decided by the District Authorities.

**35. Compliance to Environment Clearance**

Whether there are any serious violation of safety rules and regulation which may jeopardize human health and safety. If so, give details of violations and state the steps proposed to be taken with the time scheduled to rectify the violations:

No, there are not any serious violation of safety rules and regulation, which may jeopardize human health and safety. The applicant has given a commitment in this effect and undertaking also given to follow and implement, as specified in the mining plan. The applicant is undertake to abide and implement any special conditions imposed by various authorities and also to complete formalities under provision of the Mines & Mineral (Development & Regulation) Act, 1957 and the Bombay Minor Mineral rules, the Mineral Conservation and Development Rules, 1988 as amended, the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule 2013, MoEF & CC Notification S.O. 141 (E) dated 15th January 2016, and MoEF & CC Sustainable Sand Mining Management Guidelines 2016, Sustainable Sand Mining Management Guidelines 2019, Sand Mining Policy 2020

**36. Any Other Information:**

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed, and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining

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will be strictly followed by Mine Owner. Mine Owner must follow all provisions of the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule-2013, MoEF & CC Notification S.O. 141 (E) dated 15<sup>th</sup> January 2016, and MoEF & CC Sustainable Sand Mining Management Guidelines 2016, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.05.1994 and 04.09.2006.



**Risk Assessment for Avhani Sand Spot**

**1. Introduction**

A main principle of risk assessment is that it should take place before any changes are made. Risks should be assessed and control measures are put into action before new work is introduced or systems are changed. The process should influence budgets and allocation of resources, rather than being an afterthought when the decisions have already been made.

The risk management process is continuous, with well-defined steps that support better decision making by contributing greater insight into risks and their impacts. Risks from all sources are identified and once they pass the materiality threshold, a formal process begins in which causal factors and consequences are identified and the correlation with other risks and the current risk mitigating strategy is reviewed. One of the challenges is to ensure that mitigating strategies are geared to deliver reliable and timely risk information to support better decision-making.



The mining operations at AVHANI SAND SPOT are subjected to the risks and hazards normally encountered in open-cast mining operations. These risks include operational risks relating to

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materials handling, accidents, removing material from quarry area. Mining processes also rely on key inputs, for example fuel. Appropriate insurance can provide protection from some, but not all, the costs that may arise from unforeseen events. If any of these risks should materialize, such an event could result in serious harm to employees and contractors, delays in production, increased production costs and possible increase in liabilities.

Disruption to the supply of key inputs, or changes in their pricing, may have a material and adverse impact on AVHANI SAND SPOT asset values, costs, earnings and cash flows. Failure to meet production target results in increased unit costs. The impact is more pronounced at operations with a high level of fixed costs. Mitigation strategies include efforts to secure strategic supplies at competitive prices, energy reduction, and application of group water management guidelines, adoption of lean production principles and practices and business improvement initiatives to reduce unit costs.

There are certain aspects which should be taken care of, in a quarrying plan with accordance of risk management.

<b>Components</b>	<b>Risk Involved</b>
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
Fire	Only trucks and tractors will make use of diesel for transportation. Diesel is not so highly inflammable but accidental fires can take place.
Road Accidents	Vehicles are used for transporting the material from quarry area to the buyer's location. Due to some improper maintenance of the vehicle a road accident can occur leading to fatal results.

To minimize the risk, certain measures can be taken like implying safety rules, facilities of basic first aid near the site and having training for the workers about personal safety.

Disaster Management Plan is envisaged with a goal to prevent hazards and accidents at work places by careful design, operation, and maintenance of equipment's. All safety precautions and provisions of Metalliferous Mines Regulation-1961 will be strictly followed. Suitable control measures will be adopted to take care of hazards/disasters that may occur during mining operation.

- No mining activities during rainy days or just after heavy rain.
  - Fire fighting, first aid provisions & safety appliances will be made available to the staff and their use regularly checked
  - Regular maintenance of all haulage roads & mining machinery as per manufacturer's guidelines will be done
-

**APPENDIX VIII  
(See paragraph 6)  
FORM 1 M**

**APPLICATION FOR MINING OF MINOR MINERALS UNDER CATEGORY 'B2' FOR LESS THAN AND EQUAL TO FIVE HECTARE**

**(I) Basic Information**

(i) Name of the Mining Lease site: Babhulgaon - 1 Sand Spot

(ii) Location / site (GPS Co-ordinates):

<b>Boundary Points Babhulgaon-1</b>	<b>LATITUDE</b>	<b>LONGITUDE</b>
BP1	21° 7'9.57"N	75°20'18.51"E
BP2	21° 7'8.20"N	75°20'18.18"E
BP3	21° 7'8.94"N	75°20'14.73"E
BP4	21° 7'8.79"N	75°20'12.47"E
BP5	21° 7'6.09"N	75°20'7.05"E
BP6	21° 7'7.33"N	75°20'6.35"E
BP7	21° 7'10.14"N	75°20'12.01"E
BP8	21° 7'10.34"N	75°20'14.84"E

(iii) Size of the Mining Lease (Hectare): 1.548HA

(vi) Capacity of Mining Lease (TPA): 2734Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 16.40 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, Maharashtra

**(II) Environmental Sensitivity**

<b>S. No.</b>	<b>Areas</b>	<b>Distance in Kilometer/Details</b>
1	Distance of project site from nearest rail or road bridge over the concerned River, Rivulet, Nallah etc.	Bridge on Highway, 4.88Km, E
2	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road	Jalgaon Railway station 25.5 Km, S No NH Highway, 4.88Km, E 1.1Km, SW

**Babhulgaon - Isand spot over an extent of 1.548Ha At Girna River Bed Gut No. 9, 11, 12 Babhulgaon - 1 Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.**

**Form 1M**

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	Any Other Road Electric transmission line pole or tower Canal or check dam or reservoirs or lake or ponds In-take for drinking water pump house Intake for Irrigation canal pumps	1.24Km, SW Anjani Nadi, 2.6Km SW Nil Nil Nil
3	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil
4	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Water bodies: this is the case of river sand mining in Girna River bed; RF,6.8Km, SW
5	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil
6	Inland, coastal, marine or underground waters	Girna River bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	No NH Highway, 4.88Km, E 3.56Km, SW
9	Defence installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Babhulgaon 960m, SW
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Babhulgaon - 1 ZP School 2.21Km, S Navjeevan Hospital, 9.2 Km,NW
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Girna River Bed ( this is the case of river sand mining) RF,6.8Km, SE
13	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil

14	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	The mine lease area falls in Seismic Zone III (Moderate), according to the Indian Standard Seismic Zoning Map.
15	Is proposed mining site located over or near fissure / fracture for ground water recharge	No
16	Whether the proposal involves approval or clearance under the following Regulations or Acts, namely:- (a) The Forest (Conservation) Act, 1980; (b) The Wildlife (Protection) Act, 1972; (c) The Coastal Regulation Zone Notification, 2011. If yes, details of the same and their status to be given.	No
17	Forest land involved (hectares)	Nil
18	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Orders or directions of the Court, if any, and its relevance with the proposed project.	Nil

**Babhulgaon - 1 sand spot over an extent of 1.548Ha At Girna River Bed Gut No.9, 11, 12,  
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**Environmental Management Plan**

**1. Introduction**

Ministry of Environment and Forest (MoEF) Notification 2006 and Sustainable Sand Mining Management Guidelines 2016 and as per provision in Mines and Minerals (Development and Regulation) Act 1957 Schedule 60 section 15, Govt Of Maharashtra makes a Minor Mineral Extraction Rules 2013 to extract all the minor mineral in scientific way so that there is no adverse impact on Environment and Climate. To extract every minor mineral from any land (either Government or Private) there is provision of mining plan which is approved by competent authority; For long term leased minor mineral (5 – 10 years period) and Sand excavation from river bed, Senior Deputy Director of Directorate of Geology and Mining is a Competent authority, for short term Temporary permits which is valid for one year, Committee headed by Hon. Collector is Final authority to Approved the District Mining Plan.

As per Minor Mineral Extraction Rules 2013 Rules 70, Disposal of sand from Riverbed, Nallah and creeks by way of public auction, in this regards Govt resolution Gaukhni -10/0615/case No. 289/kha dated 3rd January 2018 is applicable in entire state. As per Enforcement & Monitoring Guidelines for Sand Mining 2020 Sustainable sand mining management guidelines 2016, Standard Environment condition for sand mining and sustainable mining practices, district level survey report should be prepared and area suitable for mining and area prohibited for mining be identified.

**2. Project Description**

- BABHULGAON is a small Village in Dharangaon Taluka in Jalgaon District of Maharashtra State, India. It comes under BABHULGAON Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 25 KM from District headquarters Jalgaon. The Sand Ghat is 341 KM from State capital Mumbai.
- The sand spot area is connected to approach road at a distance of 637 m in South direction. Dharangaon Railway Station is present at a distance of 13.6 km.
- Area covered in SOI Toposheet No- 460/8.
- The GPS reading of boundary point are given below:

**Table 1: Salient Features of the Project**

Items	Details
Location	Village-BABHULGAON, Tehsil- Dharangaon District-Jalgaon, Maharashtra.

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**Environmental Management Plan**

Latitude and Longitude	Boundary points of Babhulgaon - 1	Latitude	Longitude
	BP1	21° 7'9.57"N	75°20'18.51"E
	BP2	21° 7'8.20"N	75°20'18.18"E
	BP3	21° 7'8.94"N	75°20'14.73"E
	BP4	21° 7'8.79"N	75°20'12.47"E
	BP5	21° 7'6.09"N	75°20'7.05"E
	BP6	21° 7'7.33"N	75°20'6.35"E
	BP7	21° 7'10.14"N	75°20'12.01"E
	BP8	21° 7'10.34"N	75°20'14.84"E
Sand spot area (In Ha)	1.548		
Proposed production capacity (In Brass)	2735		
Manpower Requirement (considering 3-month period)	24 labors + 1 mate + 1 Supervisor=26 manpower		
Infrastructure Requirement (As per Govt Resolution 3rd January 2018)	1. Room / Hut for Official records 2. Electricity / Battery for Running CCTV on 24X 7 daily. 3. One Computer / Android base Mobile for the online generation of Invoice number.		
Water requirement & source	2.8 KLD – Tankers from nearby village.		
Project cost INR (Lakh)	16.409 Lakhs		

**3. Baseline Environmental Status**

❖ **Topography**

- The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west.
- However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep

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southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.

- South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys.
- The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Erandol, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Raver, Chopda, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Erandol, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.
- The slope of Sand Spot area is towards West side ranging from Contour 170 to 172 from MSL i.e 2m. The Highest contour value is 172 and lower is 170. The flow direction of Girna river is towards West.

❖ **Hydrology**

They will be no change in water table during mining operation, as the depth of mining shall be restricted to 1m water level, which is less likely to affect surface level or ground water table. There is no proposal of any stream modification/diversion due to this mining activity hence there will be no impact on flow of water.

❖ **Soil Environment**

The area is not having any topsoil or fertile soil. The depth of mining shall be restricted to 1m. There is no major impact on soil of the study area due to mining activities.

❖ **Land Use Land Cover**

The project area does not consist of any forest land. It does not consist of any human habitations. Any change in scope of mining as per approved mining plan can lead to bank erosion /cutting and thereby river channel shifting degradation of land, causing loss of properties and degradation of surrounding landscape.

❖ **Water Environment**

- There will not be any wastewater discharges to water bodies from the mining operations. As observed in the river, the thickness of sand to be excavated will be 1m only so there will not be any intersection with ground water table. It is observed from the dug well in the adjacent



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plain area and in the nearby villages that the ground water table varies depending upon seasonal variations. The depth to water levels in the district ranges from 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL.

- As the mining activities presently proposed are maximum up to 1m that too within the river course and the total mining operation will be achieved through manual means, there will be no effect on ground water table. All the stipulations of MoEF for sand mining and guidelines as per the Maharashtra Minor Mineral Extraction [Development and Regulation] Rules, 2013 of Section 15 of MMDR Act 1957 [67 of 1957] will be followed. Hence, impact on water regime due to the proposed sand mining is not anticipated.
  - Precautionary measures will be initiated for closing the operation and shifting the men and transport vehicles prior to onset of monsoon.
  - No oils or lubricants will be discharged in the sand to avoid water pollution.

❖ **Climate**

The climate of this district is generally dry except in the monsoon. The year may be divided into four seasons. The cold season from December to February is followed by the hot season from March to May. June to September is the monsoon season and October and November form the post-monsoon season.

❖ **Biological Environment**

The project is only of extraction of minor minerals viz. sand from the river quarry.

Flora: The area is completely barren and devoid of any vegetation in the river. Only few thorny bushes are seen on the banks of the river.

Fauna: As there is no forest cover, no wildlife can be seen in this area.

- There will be no significant impact of the river quarry mining project on the biological diversity found in the 5km. radius of the site.
- The mining lease area is in non-forest land i.e., sandy river quarry where presence of fauna is not at all seen. As such, there will be no adverse impact of the manual mining activity on fauna around the mining lease area.
- No adverse impacts will be envisaged on the existing aquatic fauna, on downstream side (away from site) as the mining confined to above water level only and at all touching/disturbing water table.

❖ **Socio-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- The mining operations will provide direct & indirect employment village people.
- The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- Local work force will be given first preference for employment.
- Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area)

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**4. Impact assessment report along with proposed mitigation measures.**

Preparation of Environmental Management Plan is required for formulation, implementation, and monitoring of environmental protection measures during and after commissioning of projects. The plan should indicate the details as to how various measures have been proposed to be taken including cost components as may be required.

**1. Land Environment**

The type of mining and the characteristics of the mineral deposit both affect the degree to which mining disturbs the landscape. Sand Mining and allied activities will be done in the fluvial plain formed by river meandering. Mining of sand may cause a few environmental degradations.

**a. Anticipated Impacts:**

- ❖ Damage of riverbank due to access ramps to riverbed, may cause soil erosion.
- ❖ Destruction of riverbank hinterland and ecological due to extraction of sand by probability of damage to the flood control bunds (built along the river side) due to heavy movements of vehicles over the bund to approach the mine area and further during transportation for sand from the mine area.
- ❖ Disposal of packing material, carried by the workers, would not be allowed. This packing material would include used sachet/ gutka /pan masala pouches.
- ❖ Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations, borehole users due to dust, noise and it also causes traffic hazards.
- ❖ Surface degradation due to road network.

**b. Mitigation Measures:**

- ❖ Safety distance of 3 meter or 1/10th of the width of the river whichever is more will be left from both the banks of the river (as per "Sustainable sand mining guidelines").
- ❖ No foreign material like polythene bag, jute bag and useless articles should be allowed to remain/spill in riverbed and catchment area, or no pits/pockets will be allowed to be filled with such material.
- ❖ Minimum number of access roads to riverbed for which cutting of riverbanks will be avoided and ramps are to be maintained.
- ❖ Care will be taken to ensure that ponding is not formed in the riverbed.
- ❖ Mining will not exceed beyond the allowed extraction capacity.
- ❖ Green belt will be developed along the haul road and the bank of rivers of mine premises and near the sand mining site. While selecting the plant species, preference will be given for planting native species of the area.

**2. Water Environment**

**a. Anticipated Impacts:**

- ❖ As the project activity is carried out in the dry part of riverbed, none of the project activities will affect the water environment or riverbank habitats. Project activities will not have any adverse effect on the physical components of the environment and therefore may not have any effect on the recharge of ground waters or affect the water quality. Monitoring of water quality will be checked yearly.

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**b. Mitigation Measures:**

- ❖ Mining is avoided during the monsoon season and at the time of floods. This will help in replenishment of sand in the riverbed.
- ❖ Mining below subterranean water level will be avoided as safeguard against environmental contamination and over exploitation of resources.
- ❖ River stream will not be diverted to form in active channels.
- ❖ Utmost care will be taken to minimize or control leakage vehicles to be used for sand transportation.
- ❖ The washing of tractor trolleys in the river will be avoided.
- ❖ The contractor will follow all guidelines and rules for proper and scientific method of mining during the period of extracting the sand.

**3. Air Environment:**

**a. Anticipated Impacts:**

**Due to Haul Road/ Access Road:**

- ❖ Plying of tractor trolleys from public road to river sand collection points needs access roads.
- ❖ Majority of such access roads are the same existing roads/tracks being used by pedestrians/cart owners. Movement of heavy vehicles sometimes causes problems to cattle, agriculture land, and human habitations due to dust, noise and movement of public.
- ❖ These environmental problems are felt more as the area is rural in nature.

**Due to Mining process:**

- ❖ Air pollution is likely to be caused at various stages of sand mining operations such as excavation, loading & transportation of material.
- ❖ Most of the dust will be generated from loading& transportation. This dust becomes air borne and gets carried away to surrounding areas.
- ❖ The impact on air is mainly localized in nature as the dust particles are not carried to longer distances and the effect is felt within the core zone of the project involving active Sand mining operations.

**b. Mitigation Measures:**

**Mitigation of Impacts on Access Roads:**

- ❖ Movement of the vehicles on the road will be increased; however, unmetalled road in the mining area will be sprinkled with water at regular intervals.
- ❖ In addition to prevent spillage by tractor trolleys over loading should be controlled along with speed limit (1Brass /tractor trolley).
- ❖ Maintenance of haul road will be done on regular basis.

**c. For Fugitive Dust Emission:**

- ❖ To avoid fugitive dust emissions at the time of excavation, regular sprinkling of water will be done on regular basis.
- ❖ Sand is transported to the sites by road through tractor trolleys. The sand carrying vehicles shall be covered by tarpaulin sheets.
- ❖ The Green Belt development will be prepared along the haul roads, which will act as a pollution sink.
- ❖ To minimize the vehicular pollution from the sand transporting vehicles, the following conditions will insist to permit the vehicles of the transporters.
- ❖ The vehicles should be (Bharat-IV stage) compliant and should have pollution control certificate (PUC) issued by appropriate authorities.

**Babhulgaon - 1 sand spot over an extent of 1.548Ha At Girna River Bed Gut No.9, 11, 12,  
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- ❖ Regular maintenance of transport vehicles and monitoring of vehicular emission levels at periodical intervals.

**4. Noise:**

**a. Anticipated Impacts:**

Noise environment in this project will be affected only by the equipment at the site and vehicular transportation. Since slight increase in noise levels can be expected.

**b. Mitigation Measures:**

- ❖ Minimum use of Horns at the village area.
- ❖ Timely maintenance of vehicles and their silencers to minimize vibration and Sound.
- ❖ Phasing out of old and worn-out tractor trolleys.
- ❖ Provision of green belts along the road networks.
- ❖ Care will be taken to produce minimum sound during sand loading.
- ❖ Use of Backhoe and ear plugs may be provided to protect the labors working at the site.

**5. Socio-Economic Environment**

This project operation will provide livelihood to the poorest section of the society.

**Anticipated Impacts and Evaluation:**

- ❖ The project activities shall not have any adverse impacts on any of the common property resources of the village communities, as the sand mine lease area is not being used for any purpose by any section of the society in this region.
- ❖ There is no R & R involvement in this project.
- ❖ There is no land acquisition in this project.
- ❖ The results of the field survey conducted to understand the knowledge and perception of the people living around the project area gives a clear idea about the need for the project.
- ❖ A major portion of the houses in the study area are semi- pucca type structures.
- ❖ The water source to these areas is from the municipal connection and private bore wells and wells. The awareness level regarding the proposed mining activity is very high. The proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes.

**a. Social and Demographic Profile:**

The workers are from local villages. These people have been provided all welfare from a lessee like medical benefits, insurance, fees for children's education etc. They have some land and cattle for their daily earnings. Additional income earned from the Sand Mining work will improve their living standard. The group of quarries in and around will help to have infrastructure facilities like roads, schools, shops etc. This will improve their social life.

**b. Occupational Health and Safety:**

This is Riverbed Sand Mine. So, the mining activities are comparatively less because the production is not on large scale. Workers do not come across any extreme condition like excessive heat, moisture etc. Workers working around it may come across this dusty environment. But the impact on health will be within limit.

**c. Human Settlement:**

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There are no houses in and around lease area. Blasting is only activity, which may affect the settlement, but settlement is at distance of more than 1.0 Km from the Sand Mining. All the due precautions will be taken during mining. Transport of finished products is through the villages. There will be psychological impact of the traffic on the local people. However, the intensity of traffic is less.

**d. Health and Hygiene:**

In general, the health of villagers is moderately good. In the rainy season, the atmospheric condition is unhygienic due to lack of proper drainage and sanitation in the village habitation. Villagers are working in agricultural fields and work as laborers.

**e. Education:**

Mostly education is up to middle standard. Economic condition is in general moderate. So, after this project the standard of education will be increase.

**f. Socio Economic Benefits Arising Out of Mining:**

- a. Generation of employment in the rural area.
- b. Improvement in the living standards of the rural people.
- c. Creating of infrastructural facilities like roads, electricity, shops, school etc.
- d. Helping to improve literacy in the area Exploiting natural mineral so generation of revenue.
- e. Helping to sustain construction activity.
- f. Improving the greenery of the area, this is otherwise poor.

**g. Liquid Effluent:**

Not applicable because small mine and impacts are negligible.

**h. Solid Waste:**

Not applicable because small mine and impacts are negligible.

**6. Biological Environment**

**Anticipated Impacts:**

- ❖ Aquatic environment Proposed mining of the dry bed of the river, so no possibility of disturbance of aquatic life.
- ❖ Flora and Fauna, the mining activity will have insignificant effect on the existing flora and fauna. The project area is surrounded with agricultural land. It was found that the sand mining activity will not have any significant impact on the biological environment of the region.

**Mitigation Measures:**

- ❖ Improvement in riverbank stability.
- ❖ Large woody debris in the riparian zone will be left undisturbed or replaced when moved and not be burnt.
- ❖ Vegetative debris will not be stored within the mine lease area.
- ❖ Operation and storage of heavy vehicles within riparian habitat will be restricted.
- ❖ Covering of loaded vehicles to reduce dust emission, which may harm surrounding agricultural crops and other plant species conservation of biological diversity of plants, birds, and animals.
- ❖ Greenbelt Development and Bio-Diversity Preservation Plantation activities will be carried out at the bank of the river and along the haul roads. This activity will help for maintaining ecology and environment of the area.

**5. Project Benefits**

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The proposed expansion project will lead to the following benefits:

- Sand is available for Building and Construction work and by regular removal of sand there is no possibility of flood.
- This project will contribute additional revenue to the state Exchequer in the form of revenue.
- The project will result in the employment opportunities to the unskilled/skilled local people.

Thereby, the quality of life of the employed people will increase.

**6. Sand Ghat Closure Plan**

- ❖ Mining will be avoided during monsoon and floods; this will allow the sand deposit to replenish.
- ❖ Gabion structure will be constructed for the sand to replenish during monsoon season.

S. No	Head	Area put on. use at start of plan [in Ha]	Additional Requirement during Plan period [in Ha]	Total [in Ha]	Area considered as	Net consider for calculation
1	Area under mining / pit	-	1.548	1.548	1.548	1.548
2	Area under dump	NIL	---	---	---	---
3	Infrastructure Workshop Administrative Building etc.	--	--	--	--	--
4	Roads	--	--	--	--	--
5	Mineral reject	--	--	--	--	--
6	Green Belt Plantation /Soil dump	--	--	--	--	--
7	Tailing Dam /pond	--	--	--	--	--
8	Effluent Treatment Plant	--	--	--	--	--
9	Mineral storage	--	--	--	--	--
10	Township area	--	--	--	--	--
11	Other to specify	--	--	--	--	--
<b>GRAND TOTAL</b>			1.548	1.548	1.548	1.548

**7. Planning Brief**

Information required on demand and supply of district (2023-24)

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S.No.	Name of District	Total sand Demand of District in Brass	Total Sand Available in district in Brass
1	Jalgaon	191380	104531

**8. Compliance of Earlier Environmental Clearance**

Babhulgaon - 1 sand spot of Babhulgaon - 1 village of Dharangaon tehsil has got environmental clearance in the year 2022-2023 but the sand ghat did not get a response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot.

**9. Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020.**

- ❖ District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- ❖ Appropriate feedback and its redressal mechanism shall also be made operational.
- ❖ Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- ❖ Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- ❖ The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- ❖ Printed on Indian Bank Association (IBA) Approved
- ❖ Magnetic Ink Character Recognition Code (MICR) paper
- ❖ Unique Barcode
- ❖ Unique Quick Response Code (QR)
- ❖ Fugitive Ink Background
- ❖ Invisible Ink Mark
- ❖ Void Pantograph
- ❖ Watermark
- ❖ GPS BASED VEHICLE TRACKING SYSTEM
- ❖ CCTV Camera

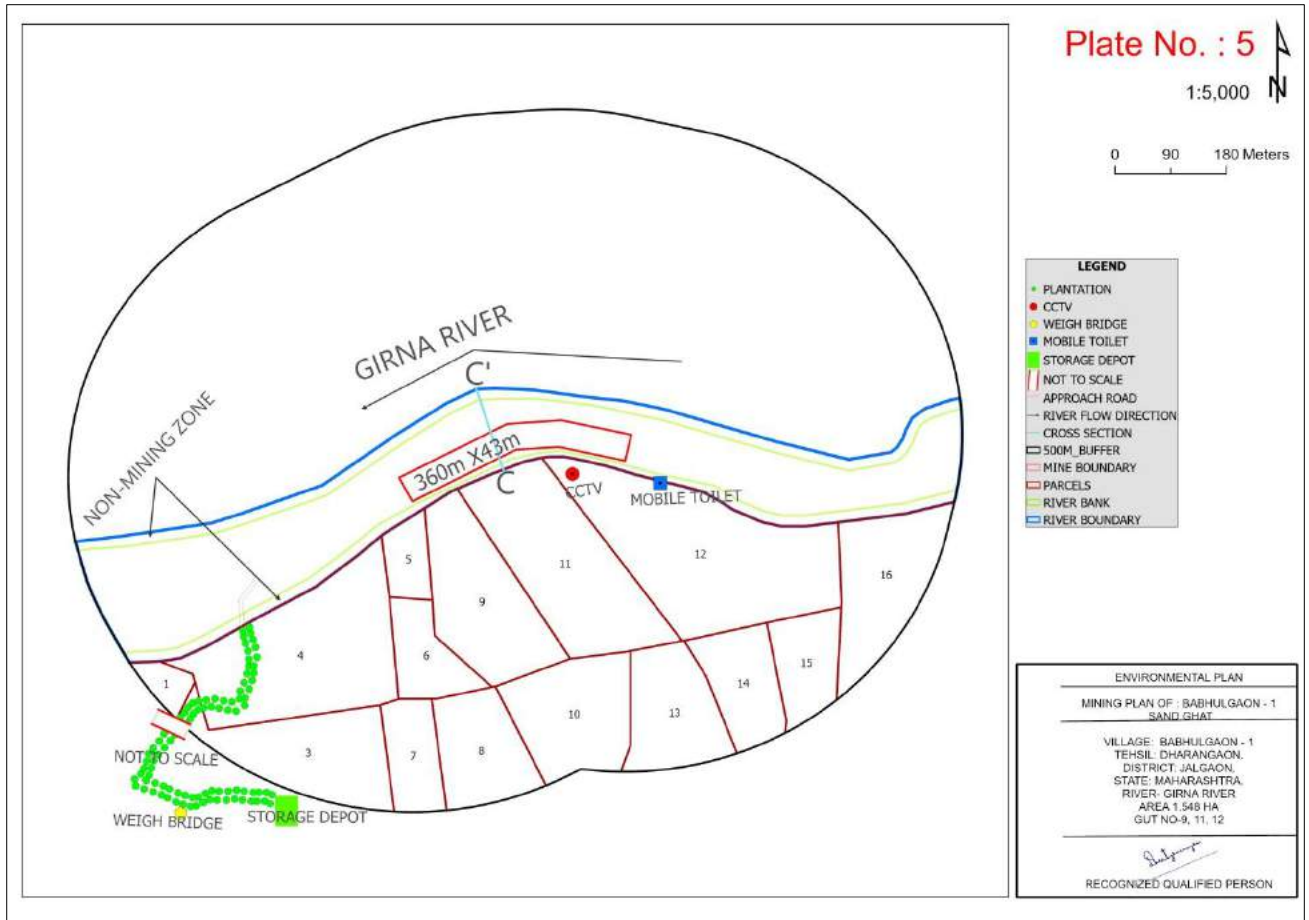
Cluster certificate with reference to the EIA Notification 2006 amended from time to time with specific remarks on the cluster formation in the periphery of the proposed sand ghat along with area map showing distances between adjoining sand mine areas.

Babhulgaon - 1 does not form a cluster.

**10. Layout of proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc.**

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Proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc. layout is given below:



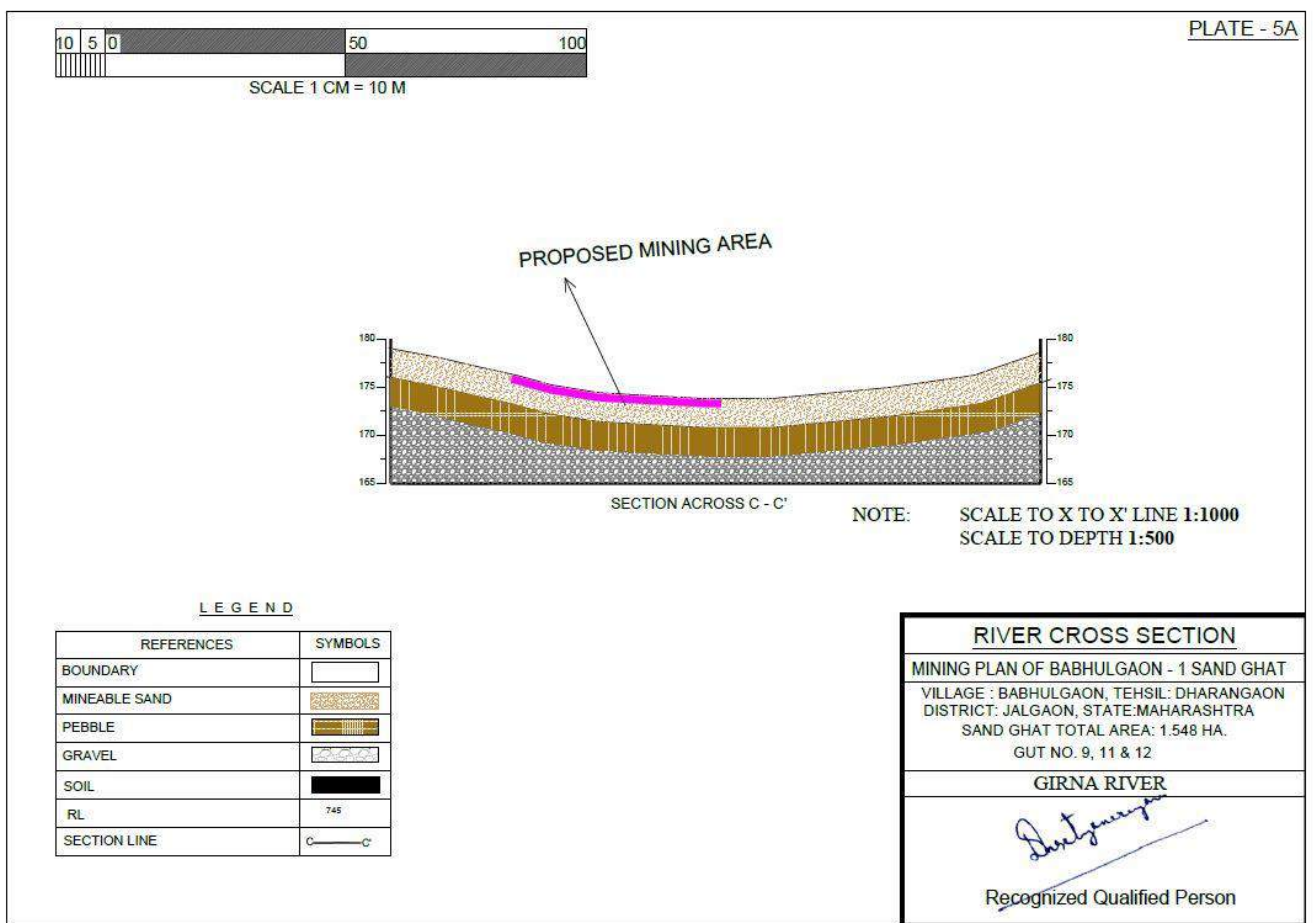
- 11. Proposed approach road for transport of mined sand from sand ghat to the storage area and consent of storage area from the concerned landowners is an after-auction activity to use their land as approach road.**

The proposed approach road length is at 637m, and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the riverbank. Consent of road submitted by Dharangaon Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from landowner.

- 12. Cross -Section of riverbed showing distance of proposed sand mine area from the riverbank and other details as prescribed in the Enforcement & Monitoring Guidelines for sand mining published in January 2020 by MoEF&CC.**



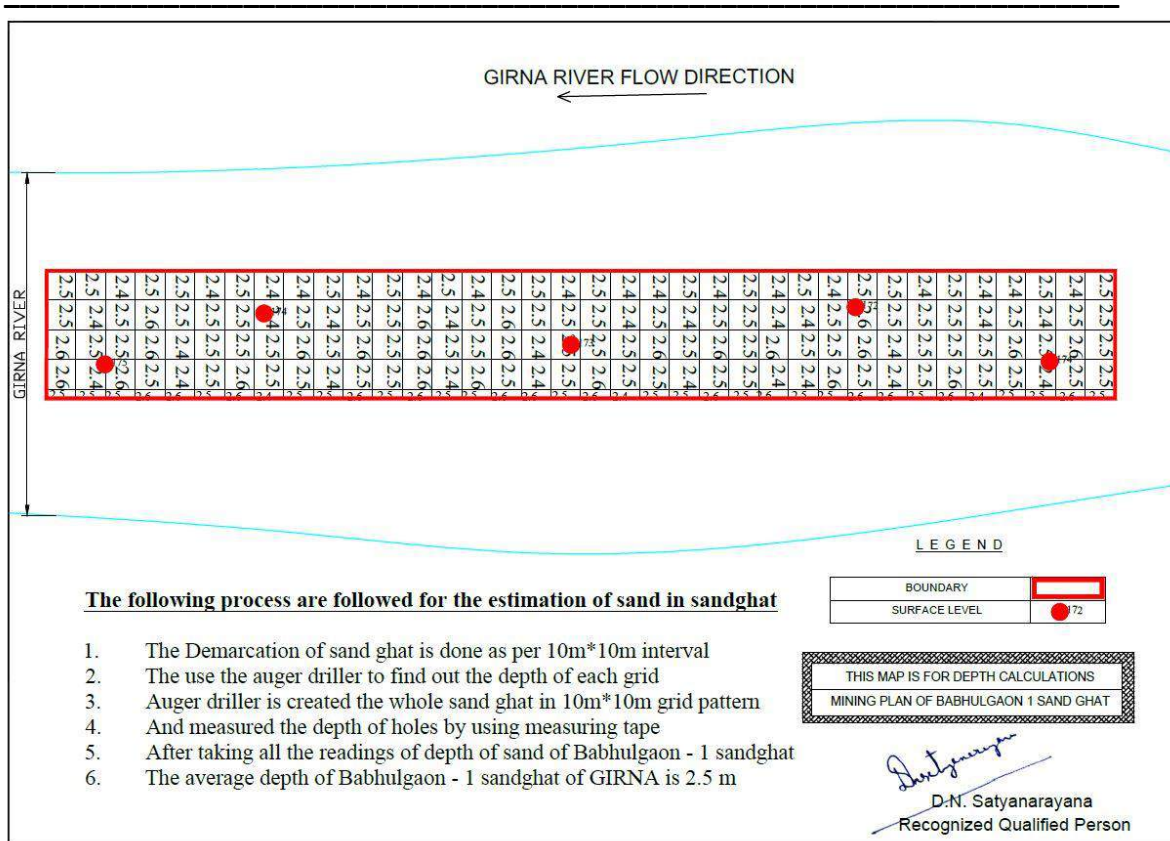
**Babhulgaon - 1 sand spot over an extent of 1.548Ha At Girna River Bed Gut No.9, 11, 12,  
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**13. Details of District Level Task Force committee meetings and status of compliance of its recommendations if any.**

**14. Methodology for Sand Mining**

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**15. Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.**

DANDY-BOLTON EQUATION

For Runoff Less Than 2 Inches

$$S = 1280 * (Q) * 0.46 * (16 - 0.26 \log(A)) * F$$

For Runoff More Than 2 Inches

$$S = 1958 * (Q) * (e - 0.055 * Q) * (13 - 0.26 \log(A))$$

Where?

S= sediment yield of stream (t/yr./km<sup>2</sup>),

Q= average annual runoff (m<sup>3</sup>),

A= net drainage area in sq. Mile

The sediment yield of Girna river at Girna dam station is 4.612\*1020 tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation.

**Conclusion:**

As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**16. PP to submit details of proposed plantation plan along with its location and requisite permission to be obtained from the Competent Authority.**

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Plantation details are presented below:

<b>Location of greenbelt</b>	Both sides of approach road, On the riverbanks of both sides of the sand spot & nearby open areas.  Haul Road outside riverbed.
<b>No. of plants to be planted</b>	409
<b>Spacing of plants</b>	4 m grid interval
<b>Species selected</b>	Native species

Tree species recommended for Plantation:

<b>Botanical name</b>	<b>Local name</b>	<b>Importance</b>
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

**17. Budget for Corporate Environment Responsibility (CER)**

About 2% fund of the project cost is allocated for Corporate Environment Responsibility (CER) activities as presented in below Table:

<b>S.No.</b>	<b>Budget Allocated</b>	<b>Budget (In INR)</b>
1	Installation of one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	25000
3	Needed Repairing work with consultation of Grampanchayat	25000
4	Community Infrastructure Development	70000
	Total	2,00,000

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**Environmental Management Plan**

**18. Environmental Management Plan (EMP)**

A total capital cost of INR **2,29,500** and recurring cost provision of about INR **2,63,330** has been kept in the project cost towards the environmental protection, control and mitigation measures and implementation of the EMP, this cost is born by bidder / lease holder. The budgetary cost estimate for the EMP is given in Table.

Table 6: Environmental Budget

Babhulgaon - 1			EMP Budget		
SNo.	Component	Description	Capital cost Rs.	Recurring Cost Rs.	Total Cost in Rs
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	31850	31850
3	Approach Road Maintenance		-	25480	25480
4	Green Belt Plantation	Along the River Bank	45000	-	45000
		Along the Approach Road	159500	-	159500
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	5000	-	5000
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	30000	30000
7	Security	Display Boards and other security measures	10000		10000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health check-up (1000Rs./ Employee)	-	26000	26000
9	Tarpaulin Cover (5000 INR per one Cover)		10000		10000
<b>Total</b>			<b>229500</b>	<b>263330</b>	<b>492830</b>

**19. Public Consultation Report**

Dharangaon					
S. No	Villager Name/Village, Taluka	Type of Person (Villager/Government Official)	Query raised by the Villager/Official	Response from the Proponent	Action Plan

**Babhulgaon - 1 sand spot over an extent of 1.548Ha At Girna River Bed Gut No.9, 11, 12,  
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**Environmental Management Plan**


**20. Summary and Conclusion**

The environmental status of the project site and study area of 10 km radius is delineated with respect to air, noise, water, land, biological and socio-economic environment the different project activities in the construction and operation phases are identified. To identify the impacts, the interaction between the project activities and different components of the environment are classified phase wise. A summary of the identified impacts is given in the following paragraphs.

During the operational phase, transportation of sand could cause a temporary disturbance to local environment which will be prevented with the proposed mitigation measures proposed in Point no. 4.

Proposed project will not have any major significant negative impacts. The minor impacts arising out during Excavation and Transportation phases can be mitigated with the help of the proposed Environmental Management Plan.

In general, Sand excavation from Babhulgaon - 1 Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

# **Babhulgaon - 1 sand spot over an extent of 1.548Ha At Girna River Bed Gut No.9, 11, 12, Babhulgaon - 1 Village, Tehsil- Dharangaon , Jalgaon District, Maharashtra. Prefeasibility Report**

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The Babhulgaon - 1 Sand Spot is situated at Village Babhulgaon - 1, Taluka Dharangaon, District- Jalgaon. Sand Spot is 1.548 HA of area in Gut No. 9,11,12 of Babhulgaon - 1 village of Dharangaon Tehsil, Jalgaon district. Detail of the project is summarised below,

- ❖ District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- ❖ District Collector Jalgaon appointed M/s Integrated Precision Systems & Services Pvt. Ltd., for preparation of Mining Plan and grant of environmental clearance.
- ❖ Applicant proposed to auction the said Sand Spot over an area of 1.548 Ha area and identified for preparation of mining plan and for grant of Environmental Clearance.
- ❖ Mining Plans are prepared by Recognized Qualified Person and approved by Directorate of Geology & Mining Govt. of Maharashtra.
- ❖ About 2735 brass sand is proposed to auction from proposed sand spot.
- ❖ Proposed site is located at the Girna riverbank.

## **1. Physiography**

- The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west.
- However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys.
- The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Erandol, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Raver, Chopda, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Erandol, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.
- The slope of Sand Spot area is towards West side ranging from Contour 170 to 172 from MSL i.e 2m. The Highest contour value is 172 and lower is 170. The flow direction of Girna river is towards West.

## **2. Local Geology**

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The local geology is Sand of various size up to depth of 2.5- 3 meter.

**3. Details of Exploration**

- ❖ There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the riverbed.
- ❖ Mining - The mining will be continued with present method of open cast mining by cutting slice of 1 m of Sand along topo-relief, by advancing from NE to SW direction as per allotted area by auction. The production can be at the rate of 15480 Cu.m or 2735 brass i.e., 1 year from the date of mining plan approval, the size of pit at the end will be 1.548HA.

**4. Introduction of the project/ background information**

The Babhulgaon - 1 Sand Spot has been kept for Auction, which is situated at Village Babhulgaon - 1 , Taluka Dharangaon, and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

**5. Brief description of project**

- ❖ The Sand Spot has sufficient Reserve of Sand to work at 15480 Cu.m for a specified period mentioned i.e., 1 year from date mining plan approval.
- ❖ The mining will continue with opencast method of Mining by cutting 1 m area of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of labourers into the tractor having capacity of 1 Brass for transport of Sand-to-sand depot from there to the various dealer sites located outside Sand Spot area.

**6. Need for the project.**

The Sand or Sand Spot under reference is aimed at exploring Sand as ROM in various sizes i.e., fine to Coarse grain which is Transported to consumer site in outside Sand Spot area, for the infrastructure development i.e., Construction activity to produce Concrete for putting in the floor, roof- slabs, Column, Pillars, Bridges & Dam construction.

**7. Project Description**

This mining project is an independent project and not an interlinked project.

**8. Location**

- BABHULGAON is a small Village in Dharangaon Taluka in Jalgaon District of Maharashtra State, India. It comes under BABHULGAON Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 25 KM from District headquarters Jalgaon. The Sand Ghat is 341 KM from State capital Mumbai.
- The sand spot area is connected to approach road at a distance of 637 m in South direction. Dharangaon Railway Station is present at a distance of 13.6 km.
- Area covered in SOI Toposheet No- 460/8.

**9. The boundary pillars of Sand Spot area are given below with GPS values.**

Boundary points of Babhulgaon - 1	Latitude	Longitude
BP1	21° 7'9.57"N	75°20'18.51"E

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BP2	21° 7'8.20"N	75°20'18.18"E
BP3	21° 7'8.94"N	75°20'14.73"E
BP4	21° 7'8.79"N	75°20'12.47"E
BP5	21° 7'6.09"N	75°20'7.05"E
BP6	21° 7'7.33"N	75°20'6.35"E
BP7	21° 7'10.14"N	75°20'12.01"E
BP8	21° 7'10.34"N	75°20'14.84"E

**10. Alternate Sites**

No alternate site is proposed.

**11. Magnitude of Operation**

Proposed period for mining of sand will be decided by the office of district collectorate 15480 cu.m. will be excavated during the period.

**12. Project description-mining details**

- ❖ The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 360m L X 43m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable.
- ❖ The Sand Spot has sufficient Reserve of Sand to work at 15480 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.
- ❖ The mining will continue with opencast method of Mining by cutting 1 m slice of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of laborer's into the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**13. Raw material, marketing & transport of ore**

The proposed sand spot will be auctioned, and successful bidder will be responsible for carrying out mining operations as per environmental terms and conditions, approved mining method as per approved mining plan and other terms and conditions. The loading of Sand generated to the tractor/tipper/dumpers will be done by loaders & material transported to the Dealer site.

**14. Resource optimization, recycle, reuse.**

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

**15. Water & energy requirement**



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The major water requirement in the lease area is for dust suppression and for drinking use. The total water requirement is estimated as 4.4 KLD the required water for dust suppression can be arranged through tankers from nearby village and drinking water will be provided in earthen pots for labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

**16. Quantity of waste & scheme for management**

There will not be any waste generation within the lease area.

**17. Schematic Representations**

It is a proposal of opencast manual sand mining from riverbed. Mining plan is approved by the competent authority.

**18. Site Analysis**

**Connectivity**

Nanded is a small Village in Dharangaon Taluka in Jalgaon District of Maharashtra State, India.

The sand spot area is connected to approach road at a distance of 637 m in South direction. Dharangaon Railway Station is present at a distance of 13.6 km.

**19. Land Use, form & Ownership**

The ultimate land use pattern for the lease area of 1.49ha. will be consisting of

Mining Area	:	1.548ha.
Construction of Temporary Roads:		0.00 ha.
Total	:	1.548ha.

At present ownership of this sand spot area is in the hand of Govt. of Maharashtra, after approval of mining plan and EC quarry area will be transfer to bidder after auction.

**20. Geology**

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

**21. Existing land use pattern**

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

**22. Social-Economic Environment**

- ❖ Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:
- ❖ The mining operations will provide direct & indirect employment village people.
- ❖ The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- ❖ Local work force will be given first preference for employment.
- ❖ Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area).

**23. Planning brief:**

**Babhulgaon - 1 sand spot over an extent of 1.548Ha At Girna River Bed Gut No.9, 11, 12,  
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The proposed project is opencast manual sand mining activity.

Supply demand ratio:

Information required on demand and supply of district (2023-24)		
Name of District	Total sand Demand of District in Brass	Total Sand Available district in Brass
Jalgaon	191380	104531

#### 24. Replenishment:

- ❖ Area of deposition and erosion was calculated for each cross-section after giving due regard to stability & safety of active channel banks & other features of importance.
- ❖ DGPS and other survey tools have been used to define topography, contours and offsets of lease area.
- ❖ Contour & elevation benchmarks are provided with the baseline data for assessing pre- and post-study period scenario.
- ❖ Physical benchmarks are fixed at intervals (1 in 30 m) & Reduced Levels (RL) are validated from a nearby standard RL.
- ❖ These RL are engraved on a steel plate (Bench Plate) & are fixed & placed at locations which are free from any damages & are available in pre- and post-study period.
- ❖ Bench plates are available for use during the mining period as reference for all mining activity.
- ❖ Baseline data on elevation status for a grid of 10 m x 10 m is taken to ensure the accuracy in the assessment.
- ❖ It was made sure that two consecutive cross-sections in longitudinal and lateral direction is not more than 10-meter distance apart.
- ❖ Changes have been observed in the elevation in pre and post scenario at each node and were depicted in graphical forms with an appropriate scale for estimating the area of deposition & erosion.
- ❖ Elevation level was placed in reference to the nearest bench-plates established for the purpose.
- ❖ The levels (MSL & RL) of corner point of each grid were identified and safety barriers (non-Mining) are demarcated as restricted in consensus with Mineral Concession Rules of respective State, and the provision mentioned in this Sustainable Sand Mining Management Guidelines.
- ❖ A clear identification was highlighted between grids under mineable and grids under the non-mineable area. These baseline data (pre and post) was subjected to stimulation with the help of data mine software to derive at the replenishment area and corresponding volume and estimated weight.
- ❖ The database was structured in a tabulated form clearly depicting the nomenclature of the section lines, latitude and longitude of the starting point, chainage and respective levels of all the points taken on that section line.
- ❖ Net area was derived after summation of area of deposition minus area of erosion for each cross-section.
- ❖ Volume was estimated by multiplying distance between two cross-sections with average of net area of these two consecutive cross-sections.



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As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**27. Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020**

- ❖ District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- ❖ Appropriate feedback and its redressal mechanism shall also be made operational.
- ❖ Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- ❖ Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- ❖ The recommendation may also include action under the provision of E(P) Act, 1986.

**28. It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:**

- ❖ Printed on Indian Bank Association (IBA) Approved
- ❖ Magnetic Ink Character Recognition Code (MICR) paper
- ❖ Unique Barcode
- ❖ Unique Quick Response Code (QR)
- ❖ Fugitive Ink Background
- ❖ Invisible Ink Mark
- ❖ Void Pantograph
- ❖ Watermark
- ❖ CCTV at mine lease site
- ❖ GPS Based Vehicle Tracking System
- ❖ The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided outside Sand Spot area.

**29. Compliance of earlier Environmental Clearance**

Babhulgaon - 1 sand spot of Babhulgaon - 1 village of Dharangaon tehsil has got environmental clearance in the year 2022-2023 but the sand ghat didn't get a response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot.

**30. Proposed Infrastructure**

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided in outside Sand Spot area.

**31. R&R Plan**

R&R is not involved.

**32. Project schedule**

Period of mining for the proposed sand spot will be decided by the Office of District Collectorate.

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Prefeasibility Report**

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**33. Analysis of Proposal**

Description of the project included in items 1-10 above indicates the following:

- ❖ It is proposed for opencast manual river sand mining.
- ❖ Opencast mining without hampering the present environmental quality of the area.
- ❖ Income to local people is uncertain & initiation of mining will ensure regular income to local people.

**34. Costing**

Costing parameters will be decided by the District Authorities.

**35. Compliance to Environment Clearance**

Whether there are any serious violation of safety rules and regulation which may jeopardize human health and safety. If so, give details of violations and state the steps proposed to be taken with the time scheduled to rectify the violations:

No, there are not any serious violation of safety rules and regulation, which may jeopardize human health and safety. The applicant has given a commitment in this effect and undertaking also given to follow and implement, as specified in the mining plan. The applicant is undertake to abide and implement any special conditions imposed by various authorities and also to complete formalities under provision of the Mines & Mineral (Development & Regulation) Act, 1957 and the Bombay Minor Mineral rules, the Mineral Conservation and Development Rules, 1988 as amended, the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule 2013, MoEF & CC Notification S.O. 141 (E) dated 15th January 2016, and MoEF & CC Sustainable Sand Mining Management Guidelines 2016, Sustainable Sand Mining Management Guidelines 2019, Sand Mining Policy 2020

**36. Any Other Information:**

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed, and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule-2013, MoEF & CC Notification S.O. 141 (E) dated 15<sup>th</sup> January 2016, and MoEF & CC Sustainable Sand Mining Management Guidelines 2016, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are

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required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.05.1994 and 04.09.2006.



materials handling, accidents, removing material from quarry area. Mining processes also rely on key inputs, for example fuel. Appropriate insurance can provide protection from some, but not all, the costs that may arise from unforeseen events. If any of these risks should materialize, such an event could result in serious harm to employees and contractors, delays in production, increased production costs and possible increase in liabilities.

Disruption to the supply of key inputs, or changes in their pricing, may have a material and adverse impact on BABHULGAON-1 SAND SPOT asset values, costs, earnings and cash flows. Failure to meet production target results in increased unit costs. The impact is more pronounced at operations with a high level of fixed costs. Mitigation strategies include efforts to secure strategic supplies at competitive prices, energy reduction, and application of group water management guidelines, adoption of lean production principles and practices and business improvement initiatives to reduce unit costs.

There are certain aspects which should be taken care of, in a quarrying plan with accordance of risk management.

<b>Components</b>	<b>Risk Involved</b>
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
Fire	Only trucks and tractors will make use of diesel for transportation. Diesel is not so highly inflammable but accidental fires can take place.
Road Accidents	Vehicles are used for transporting the material from quarry area to the buyer's location. Due to some improper maintenance of the vehicle a road accident can occur leading to fatal results.

To minimize the risk, certain measures can be taken like implying safety rules, facilities of basic first aid near the site and having training for the workers about personal safety.

Disaster Management Plan is envisaged with a goal to prevent hazards and accidents at work places by careful design, operation, and maintenance of equipment's. All safety precautions and provisions of Metalliferous Mines Regulation-1961 will be strictly followed. Suitable control measures will be adopted to take care of hazards/disasters that may occur during mining operation.

- No mining activities during rainy days or just after heavy rain.
  - Fire fighting, first aid provisions & safety appliances will be made available to the staff and their use regularly checked
  - Regular maintenance of all haulage roads & mining machinery as per manufacturer's guidelines will be done
-



**APPENDIX VIII  
(See paragraph 6)  
FORM 1 M**

**APPLICATION FOR MINING OF MINOR MINERALS UNDER CATEGORY 'B2' FOR LESS THAN AND EQUAL TO FIVE HECTARE**

**(I) Basic Information**

(i) Name of the Mining Lease site: Babhulgaon - 2 Sand Spot

(ii) Location / site (GPS Co-ordinates):

<b>Boundary Points Babhulgaon-2</b>	<b>LATITUDE</b>	<b>LONGITUDE</b>
BP1	21° 6'51.27"N	75°20'52.78"E
BP2	21° 6'48.37"N	75°20'52.66"E
BP3	21° 6'48.40"N	75°20'51.69"E
BP4	21° 6'51.43"N	75°20'51.82"E
BP5	21° 6'56.62"N	75°20'53.58"E
BP6	21° 7'1.63"N	75°20'54.59"E
BP7	21° 7'3.97"N	75°20'54.57"E
BP8	21° 7'3.98"N	75°20'55.54"E
BP9	21° 7'1.59"N	75°20'55.56"E
BP10	21° 6'56.42"N	75°20'54.53"E

(iii) Size of the Mining Lease (Hectare): 1.372HA

(vi) Capacity of Mining Lease (TPA): 2424Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 14.54 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, Maharashtra

**(II) Environmental Sensitivity**

**Babhulgaon -2 sand spot over an extent of 1.372Ha At Girna River Bed Gut No. 22,23 &24 Babhulgaon Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.**

Form 1M

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S. No.	Areas	Distance in Kilometer/Details
1	Distance of project site from nearest rail or road bridge over the concerned River, Rivulet, Nallah etc.	Bridge on Highway, 3.63Km, E
2	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road Any Other Road Electric transmission line pole or tower Canal or check dam or reservoirs or lake or ponds In-take for drinking water pump house Intake for Irrigation canal pumps	Jalgaon Railway station 28.5 Km, S No NH Highway, 3.63Km, E 1.1Km, SW 1.24Km, SW Anjani Nadi, 2.6Km SW Nil Nil Nil
3	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil
4	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Water bodies: this is the case of river sand mining in Girna River bed; RF,7.35Km, SW
5	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil
6	Inland, coastal, marine or underground waters	Girna River bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	No NH Highway, 3.63Km, E 3.56Km, SW
9	Defence installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Babhulgaon 2Km, SW
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Babhulgaon - ZP School 2.21Km, S Navjeevan Hospital, 9.2 Km,NW

**Babhulgaon -2 sand spot over an extent of 1.372Ha At Girna River Bed Gut No. 22,23 &24 Babhulgaon Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.**

**Form 1M**

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12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Girna River Bed ( this is the case of river sand mining) RF,7.35Km, SW
13	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil
14	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	The mine lease area falls in Seismic Zone III (Moderate), according to the Indian Standard Seismic Zoning Map.
15	Is proposed mining site located over or near fissure / fracture for ground water recharge	No
16	Whether the proposal involves approval or clearance under the following Regulations or Acts, namely:- (a) The Forest (Conservation) Act, 1980; (b) The Wildlife (Protection) Act, 1972; (c) The Coastal Regulation Zone Notification, 2011. If yes, details of the same and their status to be given.	No
17	Forest land involved (hectares)	Nil
18	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Orders or directions of the Court, if any, and its relevance with the proposed project.	Nil

**"Babhulgaon - 2 sand spot over an extent of 1.372Ha At Girna Riverbed Gut No.22, 23 & 24, Babhulgaon - 2 Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.  
Environmental Management Plan**

**1. Introduction**

Ministry of Environment and Forest (MoEF) Notification 2006 and Sustainable Sand Mining Management Guidelines 2016 and as per provision in Mines and Minerals (Development and Regulation) Act 1957 Schedule 60 section 15, Govt Of Maharashtra makes a Minor Mineral Extraction Rules 2013 to extract all the minor mineral in scientific way so that there is no adverse impact on Environment and Climate. To extract every minor mineral from any land (either Government or Private) there is provision of mining plan which is approved by competent authority; For long term leased minor mineral (5 – 10 years period) and Sand excavation from river bed, Senior Deputy Director of Directorate of Geology and Mining is a Competent authority, for short term Temporary permits which is valid for one year, Committee headed by Hon. Collector is Final authority to Approved the District Mining Plan.

As per Minor Mineral Extraction Rules 2013 Rules 70, Disposal of sand from Riverbed, Nallah and creeks by way of public auction, in this regards Govt resolution Gaukhni -10/0615/case No. 289/kha dated 3rd January 2018 is applicable in entire state. As per Enforcement & Monitoring Guidelines for Sand Mining 2020 Sustainable sand mining management guidelines 2016, Standard Environment condition for sand mining and sustainable mining practices, district level survey report should be prepared and area suitable for mining and area prohibited for mining be identified.

**2. Project Description**

- BABHULGAON is a small Village in Dharangaon Taluka in Jalgaon District of Maharashtra State, India. It comes under BABHULGAON Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 25 KM from District headquarters Jalgaon. The Sand Ghat is 341 KM from State capital Mumbai.
- The sand spot area is connected to approach road at 637 m in SW direction. Dharangaon Railway Station is present at 13.4 km.
- Area covered in SOI Toposheet No- 460/8. The GPS reading of boundary point are given below:

**Table 1: Salient Features of the Project**

Items	Details
Location	Village- BABHULGAON, Tehsil- Dharangaon District-Jalgaon, Maharashtra.

**"Babhulgaon - 2 sand spot over an extent of 1.372Ha At Girna Riverbed Gut No.22, 23 & 24, Babhulgaon - 2 Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.  
Environmental Management Plan**

Latitude and Longitude	Boundary points of Babhulgaon - 2	Latitude	Longitude
	BP1	21° 6'51.27"N	75°20'52.78"E
	BP2	21° 6'48.37"N	75°20'52.66"E
	BP3	21° 6'48.40"N	75°20'51.69"E
	BP4	21° 6'51.43"N	75°20'51.82"E
	BP5	21° 6'56.62"N	75°20'53.58"E
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	BP7	21° 7'3.97"N	75°20'54.57"E
	BP8	21° 7'3.98"N	75°20'55.54"E
	BP9	21° 7'1.59"N	75°20'55.56"E
	BP10	21° 6'56.42"N	75°20'54.53"E
Sand spot area (In Ha)	1.372		
Proposed production capacity (In Brass)	2424		
Manpower Requirement (considering 3-month period)	22 labors + 1 mate + 1 Supervisor=24 manpower		
Infrastructure Requirement (As per Govt Resolution 3rd January 2018)	1. Room / Hut for Official records 2. Electricity / Battery for Running CCTV on 24X 7 daily. 3. One Computer / Android base Mobile for the online generation of Invoice number.		
Water requirement & source	3.0 KLD – Tankers from nearby village.		
Project cost INR (Lakh)	14.54 Lakhs		

### 3. Baseline Environmental Status

#### ❖ Topography

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern

**"Babhulgaon - 2 sand spot over an extent of 1.372Ha At Girna Riverbed Gut No.22, 23 & 24, Babhulgaon - 2 Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.  
Environmental Management Plan**

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part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west.

- ❖ However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys.
- ❖ The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Erandol, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Raver, Chopda, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Erandol, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.
- ❖ The slope of Sand Spot area is towards West side ranging from Contour 170 to 172 from MSL i.e 2m. The Highest contour value is 172 and lower is 170. The flow direction of Girna river is towards West.

❖ **Hydrology**

They will be no change in water table during mining operation, as the depth of mining shall be restricted to 1m water level, which is less likely to affect surface level or ground water table. There is no proposal of any stream modification/diversion due to this mining activity hence there will be no impact on flow of water.

❖ **Soil Environment**

The area is not having any topsoil or fertile soil. The depth of mining shall be restricted to 1m. There is no major impact on soil of the study area due to mining activities.

❖ **Land Use Land Cover**

The project area does not consist of any forest land. It does not consist of any human habitations. Any change in scope of mining as per approved mining plan can lead to bank erosion /cutting and thereby river channel shifting degradation of land, causing loss of properties and degradation of surrounding landscape.

**"Babhulgaon - 2 sand spot over an extent of 1.372Ha At Girna Riverbed Gut No.22, 23 & 24, Babhulgaon - 2 Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.  
Environmental Management Plan**

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❖ **Water Environment**

- There will not be any wastewater discharges to water bodies from the mining operations. As observed in the river, the thickness of sand to be excavated will be 1m only so there will not be any intersection with ground water table. It is observed from the dug well in the adjacent plain area and in the nearby villages that the ground water table varies depending upon seasonal variations. The depth to water levels in the district ranges from 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL.
- As the mining activities presently proposed are maximum up to 1m that too within the river course and the total mining operation will be achieved through manual means, there will be no effect on ground water table. All the stipulations of MoEF for sand mining and guidelines as per the Maharashtra Minor Mineral Extraction [Development and Regulation] Rules, 2013 of Section 15 of MMDR Act 1957 [67 of 1957] will be followed. Hence, impact on water regime due to the proposed sand mining is not anticipated.
  - Precautionary measures will be initiated for closing the operation and shifting the men and transport vehicles prior to onset of monsoon.
  - No oils or lubricants will be discharged in the sand to avoid water pollution.

❖ **Climate**

The climate of this district is generally dry except in the monsoon. The year may be divided into four seasons. The cold season from December to February is followed by the hot season from March to May. June to September is the monsoon season and October and November form the post-monsoon season.

❖ **Biological Environment**

The project is only of extraction of minor minerals viz. sand from the river quarry.

Flora: The area is completely barren and devoid of any vegetation in the river. Only few thorny bushes are seen on the banks of the river.

Fauna: As there is no forest cover, no wildlife can be seen in this area.

- There will be no significant impact of the river quarry mining project on the biological diversity found in the 5km. radius of the site.
- The mining lease area is in non-forest land i.e., sandy river quarry where presence of fauna is not at all seen. As such, there will be no adverse impact of the manual mining activity on fauna around the mining lease area.
- No adverse impacts will be envisaged on the existing aquatic fauna, on downstream side (away from site) as the mining confined to above water level only and at all touching/disturbing water table.

❖ **Socio-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- The mining operations will provide direct & indirect employment village people.
- The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- Local work force will be given first preference for employment.

**"Babhulgaon - 2 sand spot over an extent of 1.372Ha At Girna Riverbed Gut No.22, 23 & 24, Babhulgaon - 2 Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.  
Environmental Management Plan**

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- Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area)

**4. Impact assessment report along with proposed mitigation measures.**

Preparation of Environmental Management Plan is required for formulation, implementation, and monitoring of environmental protection measures during and after commissioning of projects. The plan should indicate the details as to how various measures have been proposed to be taken including cost components as may be required.

**1. Land Environment**

The type of mining and the characteristics of the mineral deposit both affect the degree to which mining disturbs the landscape. Sand Mining and allied activities will be done in the fluvial plain formed by river meandering. Mining of sand may cause a few environmental degradations.

**a. Anticipated Impacts:**

- ❖ Damage of riverbank due to access ramps to riverbed, may cause soil erosion.
- ❖ Destruction of riverbank hinterland and ecological due to extraction of sand by probability of damage to the flood control bunds (built along the river side) due to heavy movements of vehicles over the bund to approach the mine area and further during transportation for sand from the mine area.
- ❖ Disposal of packing material, carried by the workers, would not be allowed. This packing material would include used sachet/ gutka /pan masala pouches.
- ❖ Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations, borehole users due to dust, noise and it also causes traffic hazards.
- ❖ Surface degradation due to road network.

**b. Mitigation Measures:**

- ❖ Safety distance of 3 meter or 1/10th of the width of the river whichever is more will be left from both the banks of the river (as per "Sustainable sand mining guidelines").
- ❖ No foreign material like polythene bag, jute bag and useless articles should be allowed to remain/spill in riverbed and catchment area, or no pits/pockets will be allowed to be filled with such material.
- ❖ Minimum number of access roads to riverbed for which cutting of riverbanks will be avoided and ramps are to be maintained.
- ❖ Care will be taken to ensure that ponding is not formed in the riverbed.
- ❖ Mining will not exceed beyond the allowed extraction capacity.
- ❖ Green belt will be developed along the haul road and the bank of rivers of mine premises and near the sand mining site. While selecting the plant species, preference will be given for planting native species of the area.

**2. Water Environment**

**a. Anticipated Impacts:**

- ❖ As the project activity is carried out in the dry part of riverbed, none of the project activities will affect the water environment or riverbank habitats. Project activities will not have any adverse effect on the physical components of the environment and therefore may not have any effect on the recharge of



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ground waters or affect the water quality. Monitoring of water quality will be checked yearly.

**b. Mitigation Measures:**

- ❖ Mining is avoided during the monsoon season and at the time of floods. This will help in replenishment of sand in the riverbed.
- ❖ Mining below subterranean water level will be avoided as safeguard against environmental contamination and over exploitation of resources.
- ❖ River stream will not be diverted to form in active channels.
- ❖ Utmost care will be taken to minimize or control leakage vehicles to be used for sand transportation.
- ❖ The washing of tractor trolleys in the river will be avoided.
- ❖ The contractor will follow all guidelines and rules for proper and scientific method of mining during the period of extracting the sand.

**3. Air Environment:**

**a. Anticipated Impacts:**

**Due to Haul Road/ Access Road:**

- ❖ Plying of tractor trolleys from public road to river sand collection points needs access roads.
- ❖ Majority of such access roads are the same existing roads/tracks being used by pedestrians/cart owners. Movement of heavy vehicles sometimes causes problems to cattle, agriculture land, and human habitations due to dust, noise and movement of public.
- ❖ These environmental problems are felt more as the area is rural in nature.

**Due to Mining process:**

- ❖ Air pollution is likely to be caused at various stages of sand mining operations such as excavation, loading & transportation of material.
- ❖ Most of the dust will be generated from loading& transportation. This dust becomes air borne and gets carried away to surrounding areas.
- ❖ The impact on air is mainly localized in nature as the dust particles are not carried to longer distances and the effect is felt within the core zone of the project involving active Sand mining operations.

**b. Mitigation Measures:**

**Mitigation of Impacts on Access Roads:**

- ❖ Movement of the vehicles on the road will be increased; however, unmetalled road in the mining area will be sprinkled with water at regular intervals.
- ❖ In addition to prevent spillage by tractor trolleys over loading should be controlled along with speed limit (1Brass /tractor trolley).
- ❖ Maintenance of haul road will be done on regular basis.

**c. For Fugitive Dust Emission:**

- ❖ To avoid fugitive dust emissions at the time of excavation, regular sprinkling of water will be done on regular basis.
- ❖ Sand is transported to the sites by road through tractor trolleys. The sand carrying vehicles shall be covered by tarpaulin sheets.
- ❖ The Green Belt development will be prepared along the haul roads, which will act as a pollution sink.
- ❖ To minimize the vehicular pollution from the sand transporting vehicles, the following conditions will insist to permit the vehicles of the transporters.

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- ❖ The vehicles should be (Bharat-IV stage) compliant and should have pollution control certificate (PUC) issued by appropriate authorities.
- ❖ Regular maintenance of transport vehicles and monitoring of vehicular emission levels at periodical intervals.

**4. Noise:**

**a. Anticipated Impacts:**

Noise environment in this project will be affected only by the equipment at the site and vehicular transportation. Since slight increase in noise levels can be expected.

**b. Mitigation Measures:**

- ❖ Minimum use of Horns at the village area.
- ❖ Timely maintenance of vehicles and their silencers to minimize vibration and Sound.
- ❖ Phasing out of old and worn-out tractor trolleys.
- ❖ Provision of green belts along the road networks.
- ❖ Care will be taken to produce minimum sound during sand loading.
- ❖ Use of Backhoe and ear plugs may be provided to protect the labors working at the site.

**5. Socio-Economic Environment**

This project operation will provide livelihood to the poorest section of the society.

**Anticipated Impacts and Evaluation:**

- ❖ The project activities shall not have any adverse impacts on any of the common property resources of the village communities, as the sand mine lease area is not being used for any purpose by any section of the society in this region.
- ❖ There is no R & R involvement in this project.
- ❖ There is no land acquisition in this project.
- ❖ The results of the field survey conducted to understand the knowledge and perception of the people living around the project area gives a clear idea about the need for the project.
- ❖ A major portion of the houses in the study area are semi- pucca type structures.
- ❖ The water source to these areas is from the municipal connection and private bore wells and wells. The awareness level regarding the proposed mining activity is very high. The proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes.

**a. Social and Demographic Profile:**

The workers are from local villages. These people have been provided all welfare from a lessee like medical benefits, insurance, fees for children's education etc. They have some land and cattle for their daily earnings. Additional income earned from the Sand Mining work will improve their living standard. The group of quarries in and around will help to have infrastructure facilities like roads, schools, shops etc. This will improve their social life.

**b. Occupational Health and Safety:**

This is Riverbed Sand Mine. So, the mining activities are comparatively less because the production is not on large scale. Workers do not come across any extreme condition like excessive heat, moisture etc. Workers working around it may come across this dusty environment. But the impact on health will be within limit.

**c. Human Settlement:**

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There are no houses in and around lease area. Blasting is only activity, which may affect the settlement, but settlement is at distance of more than 1.0 Km from the Sand Mining. All the due precautions will be taken during mining. Transport of finished products is through the villages. There will be psychological impact of the traffic on the local people. However, the intensity of traffic is less.

**d. Health and Hygiene:**

In general, the health of villagers is moderately good. In the rainy season, the atmospheric condition is unhygienic due to lack of proper drainage and sanitation in the village habitation. Villagers are working in agricultural fields and work as laborers.

**e. Education:**

Mostly education is up to middle standard. Economic condition is in general moderate. So, after this project the standard of education will be increase.

**f. Socio Economic Benefits Arising Out of Mining:**

- a. Generation of employment in the rural area.
- b. Improvement in the living standards of the rural people.
- c. Creating of infrastructural facilities like roads, electricity, shops, school etc.
- d. Helping to improve literacy in the area Exploiting natural mineral so generation of revenue.
- e. Helping to sustain construction activity.
- f. Improving the greenery of the area, this is otherwise poor.

**g. Liquid Effluent:**

Not applicable because small mine and impacts are negligible.

**h. Solid Waste:**

Not applicable because small mine and impacts are negligible.

**6. Biological Environment**

**Anticipated Impacts:**

- ❖ Aquatic environment Proposed mining of the dry bed of the river, so no possibility of disturbance of aquatic life.
- ❖ Flora and Fauna, the mining activity will have insignificant effect on the existing flora and fauna. The project area is surrounded with agricultural land. It was found that the sand mining activity will not have any significant impact on the biological environment of the region.

**Mitigation Measures:**

- ❖ Improvement in riverbank stability.
- ❖ Large woody debris in the riparian zone will be left undisturbed or replaced when moved and not be burnt.
- ❖ Vegetative debris will not be stored within the mine lease area.
- ❖ Operation and storage of heavy vehicles within riparian habitat will be restricted.
- ❖ Covering of loaded vehicles to reduce dust emission, which may harm surrounding agricultural crops and other plant species conservation of biological diversity of plants, birds, and animals.
- ❖ Greenbelt Development and Bio-Diversity Preservation Plantation activities will be carried out at the bank of the river and along the haul roads. This activity will help for maintaining ecology and environment of the area.

**5. Project Benefits**

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The proposed expansion project will lead to the following benefits:

- Sand is available for Building and Construction work and by regular removal of sand there is no possibility of flood.
- This project will contribute additional revenue to the state Exchequer in the form of revenue.
- The project will result in the employment opportunities to the unskilled/skilled local people.

Thereby, the quality of life of the employed people will increase.

**6. Sand Ghat Closure Plan**

- ❖ Mining will be avoided during monsoon and floods; this will allow the sand deposit to replenish.
- ❖ Gabion structure will be constructed for the sand to replenish during monsoon season.

S. No	Head	Area put on. use at start of plan [in Ha]	Additional Requirement during Plan period [in Ha]	Total [in Ha]	Area considered as	Net consider for calculation
1	Area under mining / pit	-	1.372	1.372	1.372	1.372
2	Area under dump	NIL	---	---	---	---
3	Infrastructure Workshop Administrative Building etc.	--	--	--	--	--
4	Roads	--	--	--	--	--
5	Mineral reject	--	--	--	--	--
6	Green Belt Plantation /Soil dump	--	--	--	--	--
7	Tailing Dam /pond	--	--	--	--	--
8	Effluent Treatment Plant	--	--	--	--	--
9	Mineral storage	--	--	--	--	--
10	Township area	--	--	--	--	--
11	Other to specify	--	--	--	--	--
GRAND TOTAL			1.372	1.372	1.372	1.372

**7. Planning Brief**

Information required on demand and supply of district (2023-24)

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S.No.	Name of District	Total sand Demand of District in Brass	Total Sand Available in district in Brass
1	Jalgaon	191380	104531

**8. Compliance of Earlier Environmental Clearance**

Babhulgaon - 2 sand spot of Babhulgaon - 2 village of Dharangaon tehsil has got environmental clearance in the year 2022-2023 but the sand ghat did not get a response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot.

**9. Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020.**

- ❖ District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- ❖ Appropriate feedback and its redressal mechanism shall also be made operational.
- ❖ Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- ❖ Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- ❖ The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- ❖ Printed on Indian Bank Association (IBA) Approved
- ❖ Magnetic Ink Character Recognition Code (MICR) paper
- ❖ Unique Barcode
- ❖ Unique Quick Response Code (QR)
- ❖ Fugitive Ink Background
- ❖ Invisible Ink Mark
- ❖ Void Pantograph
- ❖ Watermark
- ❖ GPS BASED VEHICLE TRACKING SYSTEM
- ❖ CCTV Camera

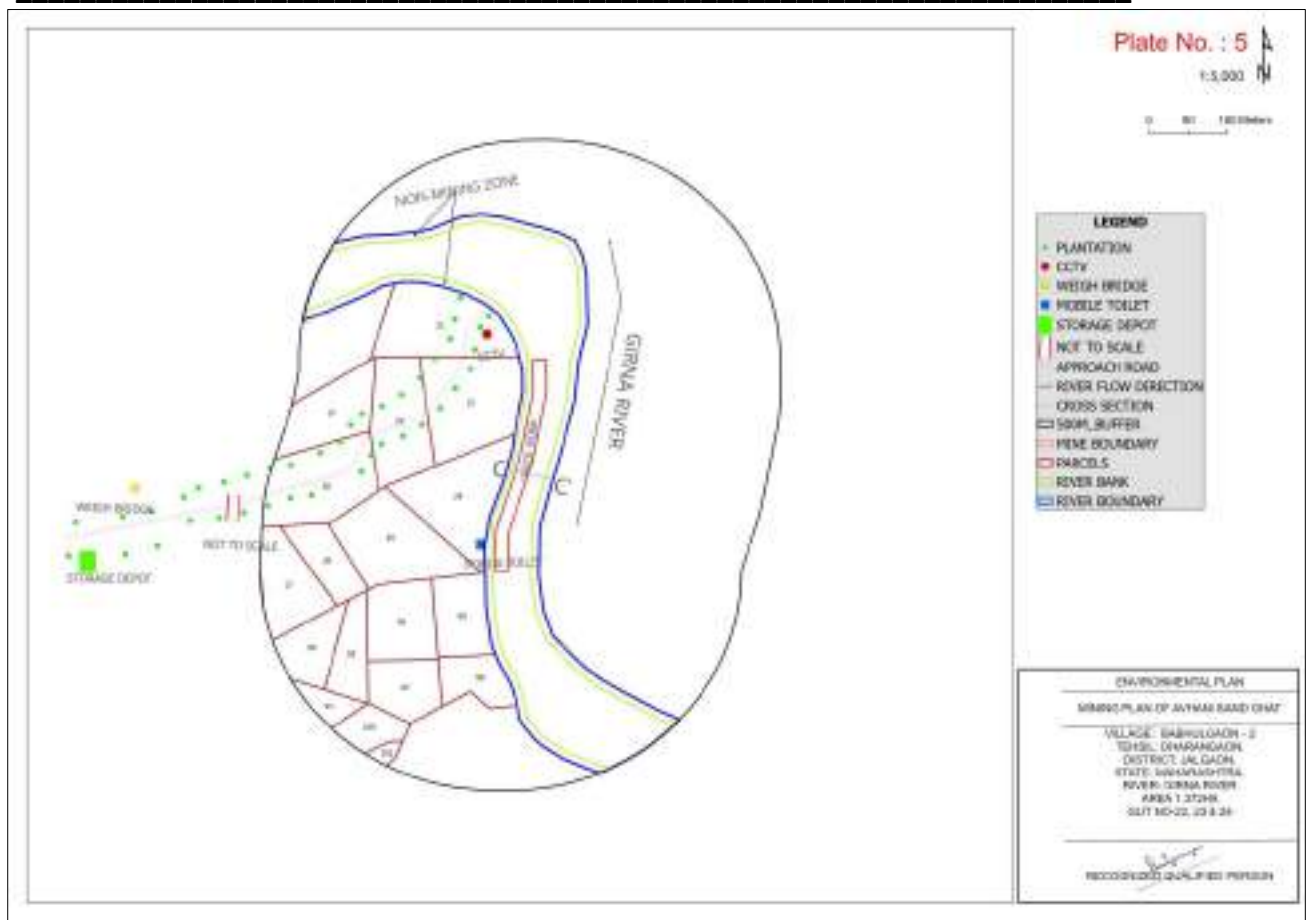
Cluster certificate with reference to the EIA Notification 2006 amended from time to time with specific remarks on the cluster formation in the periphery of the proposed sand ghat along with area map showing distances between adjoining sand mine areas.

Babhulgaon - 2 does not form a cluster.

**10. Layout of proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc.**

Proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc. layout is given below:

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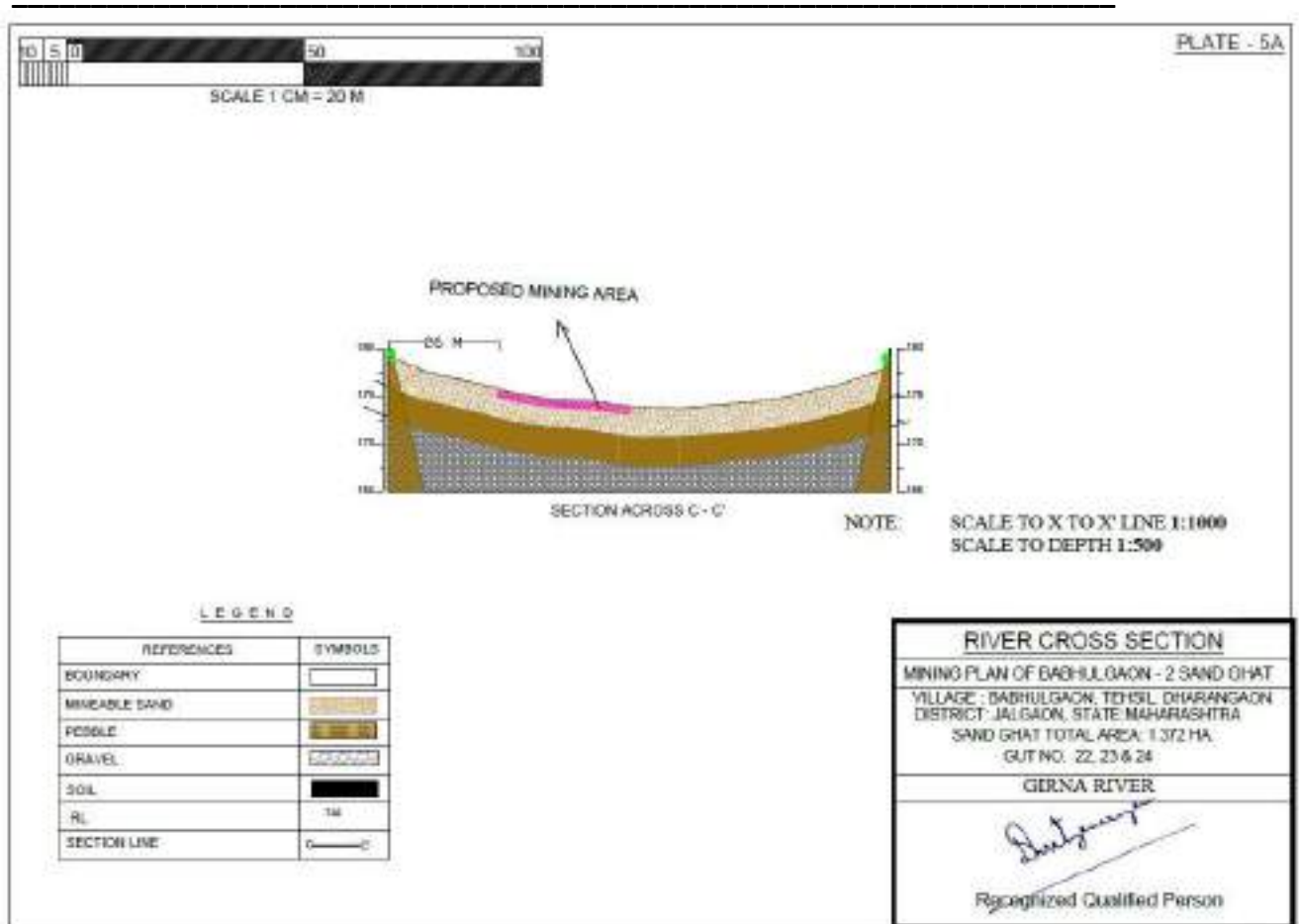


**11. Proposed approach road for transport of mined sand from sand ghat to the storage area and consent of storage area from the concerned landowners is an after-auction activity to use their land as approach road.**

The proposed approach road length is at 881m, and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the riverbank. Consent of road submitted by Dharangaon Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from landowner.

**12. Cross -Section of riverbed showing distance of proposed sand mine area from the riverbank and other details as prescribed in the Enforcement & Monitoring Guidelines for sand mining published in January 2020 by MoEF&CC.**

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**13. Details of District Level Task Force committee meetings and status of compliance of its recommendations if any.**

**14. Methodology for Sand Mining**





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Plantation details are presented below:

<b>Location of greenbelt</b>	Both sides of approach road, On the riverbanks of both sides of the sand spot & nearby open areas.  Haul Road outside riverbed.
<b>No. of plants to be planted</b>	564
<b>Spacing of plants</b>	4 m grid interval
<b>Species selected</b>	Native species

Tree species recommended for Plantation:

<b>Botanical name</b>	<b>Local name</b>	<b>Importance</b>
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

**17. Budget for Corporate Environment Responsibility (CER)**

About 2% fund of the project cost is allocated for Corporate Environment Responsibility (CER) activities as presented in below Table:

<b>S.No.</b>	<b>Budget Allocated</b>	<b>Budget (In INR)</b>
1	Installation of one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	25000
3	Needed Repairing work with consultation of Grampanchayat	25000
4	Community Infrastructure Development	70000
	Total	2,00,000

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**18. Environmental Management Plan (EMP)**

A total capital cost of INR **3,06,750** and recurring cost provision of about INR **2,83,290** has been kept in the project cost towards the environmental protection, control and mitigation measures and implementation of the EMP, this cost is born by bidder / lease holder. The budgetary cost estimate for the EMP is given in Table.

**Table 6: Environmental Budget**

Babhulgaon - 2			EMP Budget		
S.No.	Component	Description	Capital cost Rs.	Recurring Cost Rs.	Total Cost in Rs
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	44050	44050
3	Approach Road Maintenance		-	35240	35240
4	Green Belt Plantation	Along the Riverbank	61250	-	61250
		Along the Approach Road	220500	-	220500
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	5000	-	5000
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	30000	30000
7	Security	Display Boards and other security measures	10000	-	10000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health check-up (1000Rs./ Employee)	-	24000	24000
9	Tarpaulin Cover (5000 INR per one Cover)		10000	-	10000
<b>Total</b>			<b>306750</b>	<b>283290</b>	<b>590040</b>

**19. Public Consultation Report**

Dharangaon					
S. No	Villager Name/Village, Taluka	Type of Person (Villager/Government Official)	Query raised by the Villager/Official	Response from the Proponent	Action Plan

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**20. Summary and Conclusion**

The environmental status of the project site and study area of 10 km radius is delineated with respect to air, noise, water, land, biological and socio-economic environment the different project activities in the construction and operation phases are identified. To identify the impacts, the interaction between the project activities and different components of the environment are classified phase wise. A summary of the identified impacts is given in the following paragraphs.

During the operational phase, transportation of sand could cause a temporary disturbance to local environment which will be prevented with the proposed mitigation measures proposed in Point no. 4.

Proposed project will not have any major significant negative impacts. The minor impacts arising out during Excavation and Transportation phases can be mitigated with the help of the proposed Environmental Management Plan.

In general, Sand excavation from Babhulgaon - 2 Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

# **"Babhulgaon - 2 sand spot over an extent of 1.372Ha At Girna Riverbed Gut No.22, 23 & 24, Babhulgaon - 2 Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra. Prefeasibility Report**

The Babhulgaon - 2 Sand Spot is situated at Village Babhulgaon - 2 , Taluka Dharangaon, District- Jalgaon. Sand Spot is 1.372 HA of area in Gut No. 22,23,24 of Babhulgaon - 2 village of Dharangaon Tehsil, Jalgaon district. Detail of the project is summarised below,

- ❖ District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- ❖ District Collector Jalgaon appointed M/s Integrated Precision Systems & Services Pvt. Ltd., for preparation of Mining Plan and grant of environmental clearance.
- ❖ Applicant proposed to auction the said Sand Spot over an area of 1.372 Ha area and identified for preparation of mining plan and for grant of Environmental Clearance.
- ❖ Mining Plans are prepared by Recognized Qualified Person and approved by Directorate of Geology & Mining Govt. of Maharashtra.
- ❖ About 2424 brass sand is proposed to auction from proposed sand spot.
- ❖ Proposed site is located at the Girna riverbank.

## **1. Physiography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west.
- ❖ However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys.
- ❖ The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Erandol, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Raver, Chopda, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Erandol, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.
- ❖ The slope of Sand Spot area is towards West side ranging from Contour 170 to 172 from MSL i.e 2m. The Highest contour value is 172 and lower is 170. The flow direction of Girna river is towards West.

## **2. Local Geology**

The local geology is Sand of various size up to depth of 2.5- 3 meter.

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**3. Details of Exploration**

- ❖ There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the riverbed.
- ❖ Mining - The mining will be continued with present method of open cast mining by cutting slice of 1 m of Sand along topo-relief, by advancing from NE to SW direction as per allotted area by auction. The production can be at the rate of 6860 Cu.m or 2424 brass i.e., 1 year from the date of mining plan approval, the size of pit at the end will be 1.372HA.

**4. Introduction of the project/ background information**

The Babhulgaon - 2 Sand Spot has been kept for Auction, which is situated at Village Babhulgaon - 2, Taluka Dharangaon, and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

**5. Brief description of project**

- ❖ The Sand Spot has sufficient Reserve of Sand to work at 6860 Cu.m for a specified period mentioned i.e., 1 year from date mining plan approval.
- ❖ The mining will continue with opencast method of Mining by cutting 1 m area of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of labourers into the tractor having capacity of 1 Brass for transport of Sand-to-sand depot from there to the various dealer sites located outside Sand Spot area.

**6. Need for the project.**

The Sand or Sand Spot under reference is aimed at exploring Sand as ROM in various sizes i.e., fine to Coarse grain which is Transported to consumer site in outside Sand Spot area, for the infrastructure development i.e., Construction activity to produce Concrete for putting in the floor, roof- slabs, Column, Pillars, Bridges & Dam construction.

**7. Project Description**

This mining project is an independent project and not an interlinked project.

**8. Location**

- ❖ BABHULGAON is a small Village in Dharangaon Taluka in Jalgaon District of Maharashtra State, India. It comes under BABHULGAON Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 25 KM from District headquarters Jalgaon. The Sand Ghat is 341 KM from State capital Mumbai.
- ❖ The sand spot area is connected to approach road at 637 m in SW direction. Dharangaon Railway Station is present at 13.4 km.
- ❖ Area covered in SOI Toposheet No- 460/8.

**9. The boundary pillars of Sand Spot area are given below with GPS values.**

Boundary points of Babhulgaon - 2	Latitude	Longitude
BP1	21° 6'51.27"N	75°20'52.78"E

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BP2	21° 6'48.37"N	75°20'52.66"E
BP3	21° 6'48.40"N	75°20'51.69"E
BP4	21° 6'51.43"N	75°20'51.82"E
BP5	21° 6'56.62"N	75°20'53.58"E
BP6	21° 7'1.63"N	75°20'54.59"E
BP7	21° 7'3.97"N	75°20'54.57"E
BP8	21° 7'3.98"N	75°20'55.54"E
BP9	21° 7'1.59"N	75°20'55.56"E
BP10	21° 6'56.42"N	75°20'54.53"E

**10. Alternate Sites**

No alternate site is proposed.

**11. Magnitude of Operation**

Proposed period for mining of sand will be decided by the office of district collectorate 6860 cu.m. will be excavated during the period.

**12. Project description-mining details**

- ❖ The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 490m L X 28m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable.
- ❖ The Sand Spot has sufficient Reserve of Sand to work at 6860 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.
- ❖ The mining will continue with opencast method of Mining by cutting 1 m slice of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of laborer's into the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**13. Raw material, marketing & transport of ore**

The proposed sand spot will be auctioned, and successful bidder will be responsible for carrying out mining operations as per environmental terms and conditions, approved mining method as per approved mining plan and other terms and conditions. The loading of Sand generated to the tractor/tipper/dumpers will be done by loaders & material transported to the Dealer site.

**14. Resource optimization, recycle, reuse.**

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

**"Babhulgaon - 2 sand spot over an extent of 1.372Ha At Girna Riverbed Gut No.22, 23 & 24, Babhulgaon - 2 Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.  
Prefeasibility Report**

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**15. Water & energy requirement**

The major water requirement in the lease area is for dust suppression and for drinking use. The total water requirement is estimated as 4.4 KLD the required water for dust suppression can be arranged through tankers from nearby village and drinking water will be provided in earthen pots for labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

**16. Quantity of waste & scheme for management**

There will not be any waste generation within the lease area.

**17. Schematic Representations**

It is a proposal of opencast manual sand mining from riverbed. Mining plan is approved by the competent authority.

**18. Site Analysis**

**Connectivity**

Babhulgaon - 2 is a small Village in Dharangaon Taluka in Jalgaon District of Maharashtra State, India. The sand spot area is connected to approach road at a distance of 637 m in SW direction. Dharangaon Railway Station is present at a distance of 13.4 km.

**19. Land Use, form & Ownership**

The ultimate land use pattern for the lease area of 1.49ha. will be consisting of

Mining Area	:	1.372ha.
Construction of Temporary Roads:		0.00 ha.
Total	:	1.372ha.

At present ownership of this sand spot area is in the hand of Govt. of Maharashtra, after approval of mining plan and EC quarry area will be transfer to bidder after auction.

**20. Geology**

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

**21. Existing land use pattern**

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

**22. Social-Economic Environment**

- ❖ Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:
- ❖ The mining operations will provide direct & indirect employment village people.
- ❖ The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- ❖ Local work force will be given first preference for employment.
- ❖ Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area).

**"Babhulgaon - 2 sand spot over an extent of 1.372Ha At Girna Riverbed Gut No.22, 23 & 24, Babhulgaon - 2 Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.  
Prefeasibility Report**

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**23. Planning brief:**

The proposed project is opencast manual sand mining activity.

**Supply demand ratio:**

Information required on demand and supply of district (2023-24)		
Name of District	Total sand Demand of District in Brass	Total Sand Available district in Brass
Jalgaon	191380	104531

**24. Replenishment:**

- ❖ Area of deposition and erosion was calculated for each cross-section after giving due regard to stability & safety of active channel banks & other features of importance.
- ❖ DGPS and other survey tools have been used to define topography, contours and offsets of lease area.
- ❖ Contour & elevation benchmarks are provided with the baseline data for assessing pre- and post-study period scenario.
- ❖ Physical benchmarks are fixed at intervals (1 in 30 m) & Reduced Levels (RL) are validated from a nearby standard RL.
- ❖ These RL are engraved on a steel plate (Bench Plate) & are fixed & placed at locations which are free from any damages & are available in pre- and post-study period.
- ❖ Bench plates are available for use during the mining period as reference for all mining activity.
- ❖ Baseline data on elevation status for a grid of 10 m x 10 m is taken to ensure the accuracy in the assessment.
- ❖ It was made sure that two consecutive cross-sections in longitudinal and lateral direction is not more than 10-meter distance apart.
- ❖ Changes have been observed in the elevation in pre and post scenario at each node and were depicted in graphical forms with an appropriate scale for estimating the area of deposition & erosion.
- ❖ Elevation level was placed in reference to the nearest bench-plates established for the purpose.
- ❖ The levels (MSL & RL) of corner point of each grid were identified and safety barriers (non-Mining) are demarcated as restricted in consensus with Mineral Concession Rules of respective State, and the provision mentioned in this Sustainable Sand Mining Management Guidelines.
- ❖ A clear identification was highlighted between grids under mineable and grids under the non-mineable area. These baseline data (pre and post) was subjected to stimulation with the help of data mine software to derive at the replenishment area and corresponding volume and estimated weight.
- ❖ The database was structured in a tabulated form clearly depicting the nomenclature of the section lines, latitude and longitude of the starting point, chainage and respective levels of all the points taken on that section line.
- ❖ Net area was derived after summation of area of deposition minus area of erosion for each cross-section.
- ❖ Volume was estimated by multiplying distance between two cross-sections with average of net area of these two consecutive cross-sections.



**"Babhulgaon - 2 sand spot over an extent of 1.372Ha At Girna Riverbed Gut No.22, 23 & 24, Babhulgaon - 2 Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.**

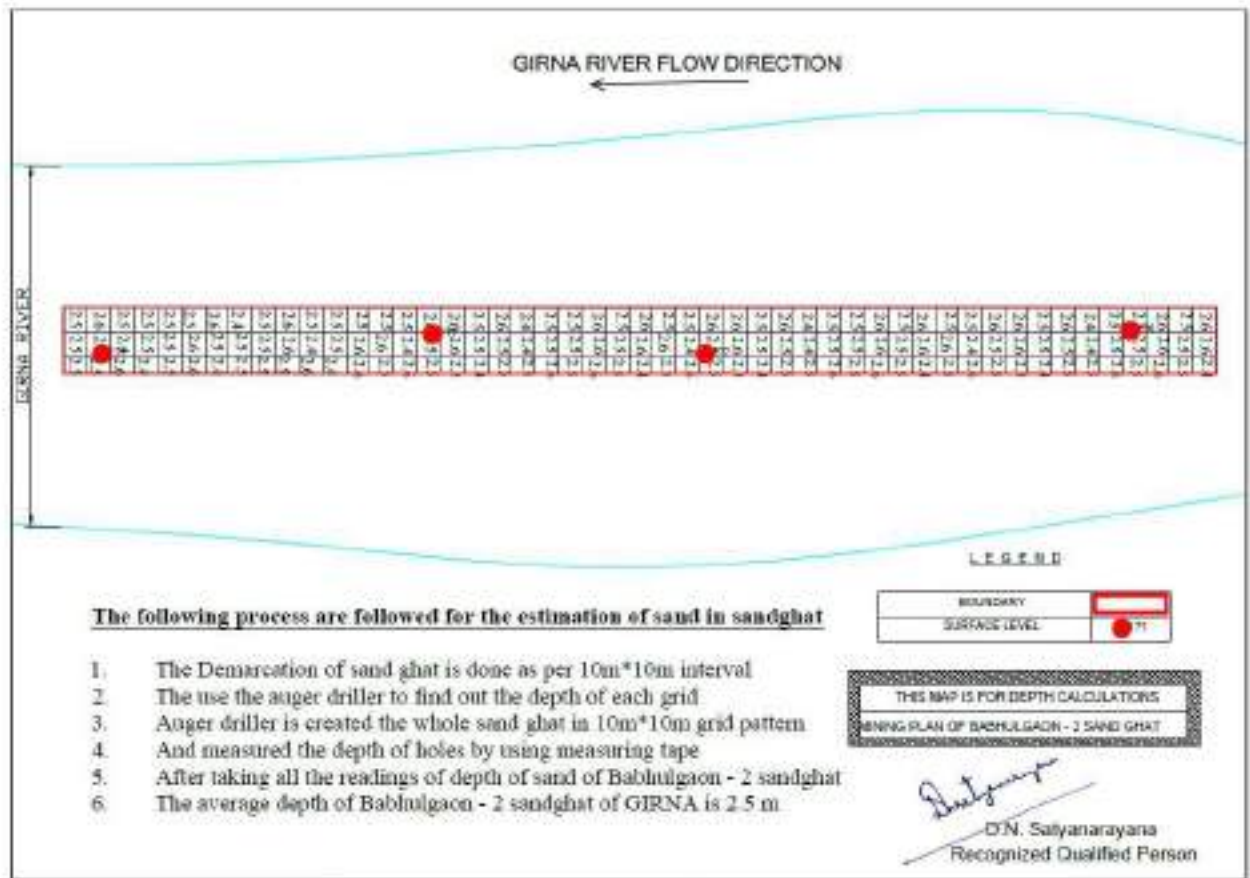
## **Prefeasibility Report**

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- ❖ One sample per 900 square meters (30 m x 30 m) was preferred for sample density for assessment of bulk density for estimation of deposition rate.
- ❖ Care was taken that the sample for assessment of bulk density is taken from the deposition zone & not from erosion.

**"Babhulgaon - 2 sand spot over an extent of 1.372Ha At Girna Riverbed Gut No.22, 23 & 24, Babhulgaon - 2 Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.  
Prefeasibility Report**

26. Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.



**27. DANDY-BOLTON EQUATION**

For Runoff Less Than 2 Inches

$$S = 1280 * (Q) * 0.46 * (1.46 - 0.26 \log(A)) * F$$

For Runoff More Than 2 Inches

$$S = 1958 * (Q) * (e^{-0.055 * Q}) * (1.43 - 0.26 \log(A))$$

Where?

S= sediment yield of stream (t/yr./km<sup>2</sup>),

Q= average annual runoff (m<sup>3</sup>),

A= net drainage area in sq. mile

The sediment yield of Girna river at Girna dam station is 4.612\*10<sup>20</sup> tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation.

Conclusion:

As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**"Babhulgaon - 2 sand spot over an extent of 1.372Ha At Girna Riverbed Gut No.22, 23 & 24, Babhulgaon - 2 Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.  
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**28. Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020**

- ❖ District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- ❖ Appropriate feedback and its redressal mechanism shall also be made operational.
- ❖ Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- ❖ Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- ❖ The recommendation may also include action under the provision of E(P) Act, 1986.

**29. It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:**

- ❖ Printed on Indian Bank Association (IBA) Approved
- ❖ Magnetic Ink Character Recognition Code (MICR) paper
- ❖ Unique Barcode
- ❖ Unique Quick Response Code (QR)
- ❖ Fugitive Ink Background
- ❖ Invisible Ink Mark
- ❖ Void Pantograph
- ❖ Watermark
- ❖ CCTV at mine lease site
- ❖ GPS Based Vehicle Tracking System
- ❖ The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided outside Sand Spot area.

**30. Compliance of earlier Environmental Clearance**

Babhulgaon - 2 sand spot of Babhulgaon - 2 village of Dharangaon tehsil has got environmental clearance in the year 2022-2023 but the sand ghat didn't get a response in E-Tender and E-Auction Process, Hence the Environmental Clearance was not done for the sand spot.

**31. Proposed Infrastructure**

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided in outside Sand Spot area.

**32. R&R Plan**

R&R is not involved.

**33. Project schedule**

Period of mining for the proposed sand spot will be decided by the Office of District Collectorate.

**34. Analysis of Proposal**

Description of the project included in items 1-10 above indicates the following:

- ❖ It is proposed for opencast manual river sand mining.
- ❖ Opencast mining without hampering the present environmental quality of the area.

**"Babhulgaon - 2 sand spot over an extent of 1.372Ha At Girna Riverbed Gut No.22, 23 & 24, Babhulgaon - 2 Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.  
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❖ Income to local people is uncertain & initiation of mining will ensure regular income to local people.

**35. Costing**

Costing parameters will be decided by the District Authorities.

**36. Compliance to Environment Clearance**

Whether there are any serious violation of safety rules and regulation which may jeopardize human health and safety. If so, give details of violations and state the steps proposed to be taken with the time scheduled to rectify the violations:

No, there are not any serious violation of safety rules and regulation, which may jeopardize human health and safety. The applicant has given a commitment in this effect and undertaking also given to follow and implement, as specified in the mining plan. The applicant is undertake to abide and implement any special conditions imposed by various authorities and also to complete formalities under provision of the Mines & Mineral (Development & Regulation) Act, 1957 and the Bombay Minor Mineral rules, the Mineral Conservation and Development Rules, 1988 as amended, the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule 2013, MoEF & CC Notification S.O. 141 (E) dated 15th January 2016, and MoEF & CC Sustainable Sand Mining Management Guidelines 2016, Sustainable Sand Mining Management Guidelines 2019, Sand Mining Policy 2020

**37. Any Other Information:**

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed, and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule-2013, MoEF & CC Notification S.O. 141 (E) dated 15<sup>th</sup> January 2016, and MoEF & CC Sustainable Sand Mining Management Guidelines 2016, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.05.1994 and 04.09.2006.

**Risk Assessment for Babhulgaon-2 Sand Spot**

**1. Introduction**

A main principle of risk assessment is that it should take place before any changes are made. Risks should be assessed and control measures are put into action before new work is introduced or systems are changed. The process should influence budgets and allocation of resources, rather than being an afterthought when the decisions have already been made.

The risk management process is continuous, with well-defined steps that support better decision making by contributing greater insight into risks and their impacts. Risks from all sources are identified and once they pass the materiality threshold, a formal process begins in which causal factors and consequences are identified and the correlation with other risks and the current risk mitigating strategy is reviewed. One of the challenges is to ensure that mitigating strategies are geared to deliver reliable and timely risk information to support better decision-making.



The mining operations at BABHULGAON-1 SAND SPOT are subjected to the risks and hazards normally encountered in open-cast mining operations. These risks include operational risks relating to

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materials handling, accidents, removing material from quarry area. Mining processes also rely on key inputs, for example fuel. Appropriate insurance can provide protection from some, but not all, the costs that may arise from unforeseen events. If any of these risks should materialize, such an event could result in serious harm to employees and contractors, delays in production, increased production costs and possible increase in liabilities.

Disruption to the supply of key inputs, or changes in their pricing, may have a material and adverse impact on BABHULGAON-2 SAND SPOT asset values, costs, earnings and cash flows. Failure to meet production target results in increased unit costs. The impact is more pronounced at operations with a high level of fixed costs. Mitigation strategies include efforts to secure strategic supplies at competitive prices, energy reduction, and application of group water management guidelines, adoption of lean production principles and practices and business improvement initiatives to reduce unit costs.

There are certain aspects which should be taken care of, in a quarrying plan with accordance of risk management.

<b>Components</b>	<b>Risk Involved</b>
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
Fire	Only trucks and tractors will make use of diesel for transportation. Diesel is not so highly inflammable but accidental fires can take place.
Road Accidents	Vehicles are used for transporting the material from quarry area to the buyer's location. Due to some improper maintenance of the vehicle a road accident can occur leading to fatal results.

To minimize the risk, certain measures can be taken like implying safety rules, facilities of basic first aid near the site and having training for the workers about personal safety.

Disaster Management Plan is envisaged with a goal to prevent hazards and accidents at work places by careful design, operation, and maintenance of equipment's. All safety precautions and provisions of Metalliferous Mines Regulation-1961 will be strictly followed. Suitable control measures will be adopted to take care of hazards/disasters that may occur during mining operation.

- No mining activities during rainy days or just after heavy rain.
  - Fire fighting, first aid provisions & safety appliances will be made available to the staff and their use regularly checked
  - Regular maintenance of all haulage roads & mining machinery as per manufacturer's guidelines will be done
-

**APPENDIX VIII  
(See paragraph 6)  
FORM 1 M**

**APPLICATION FOR MINING OF MINOR MINERALS UNDER CATEGORY 'B2' FOR LESS THAN AND EQUAL TO FIVE HECTARE**

**(I) Basic Information**

(i) Name of the Mining Lease site: Dapore Sand Spot

(ii) Location / site (GPS Co-ordinates):

Boundary Points Dapore	Latitude	Longitude
BP1	20°55'38.36"N	75°29'35.92"E
BP2	20°55'38.18"N	75°29'33.33"E
BP3	20°55'45.31"N	75°29'32.76"E
BP4	20°55'45.49"N	75°29'35.35"E

(iii) Size of the Mining Lease (Hectare): 1.65HA

(vi) Capacity of Mining Lease (TPA): 2915 Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 17.49 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, Maharashtra

**(II) Environmental Sensitivity**

S. No.	Areas	Distance in Kilometer/Details
1	Distance of project site from nearest rail or road bridge over the concerned River, Rivulet, Nallah etc.	Bridge on SH-185, 7.7Km, SW
2	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road	Jalgaon Railway station, 10.5 Km, NW NH6 10.5Km, N SH185, 6.47Km, SW Nimbhora-Dasnur Rd, 3.5Km, E

**Dapore sand spot over an extent of 1.65Ha At Girna River Bed Gut No.1 & 2, Dapore Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

**Form 1M**

**Page: 2 of 2**

	Any Other Road Electric transmission line pole or tower Canal or check dam or reservoirs or lake or ponds In-take for drinking water pump house Intake for Irrigation canal pumps	ET, 1.1Km, NW Nil Nil Nil
3	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil
4	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Water bodies: this is the case of river sand mining in Girna River bed; RF,10Km, SW
5	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil
6	Inland, coastal, marine or underground waters	Girna River bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	NH6 10.5Km, N SH185, 6.47Km, SW
9	Defense installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Dapore, 419m, SE
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	ZP School 0.5Km, SE Shri Gulabrao Deokar Hospital, 7.3 Km, NE
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Girna River Bed ( this is the case of river sand mining) RF,10Km SW
13	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil
14	Areas susceptible to natural hazard which could cause the project to present environmental problems	The mine lease area falls in Seismic Zone III (Moderate), according to the Indian Standard Seismic Zoning Map.



**Dapore sand spot over an extent of 1.65Ha At Girna River Bed Gut No.1 & 2, Dapore Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

**Form 1M**

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	(earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	
15	Is proposed mining site located over or near fissure / fracture for ground water recharge	No
16	Whether the proposal involves approval or clearance under the following Regulations or Acts, namely:- (a) The Forest (Conservation) Act, 1980; (b) The Wildlife (Protection) Act, 1972; (c) The Coastal Regulation Zone Notification, 2011. If yes, details of the same and their status to be given.	No
17	Forest land involved (hectares)	Nil
18	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Orders or directions of the Court, if any, and its relevance with the proposed project.	Nil

***Dapore sand spot over an extent of 1.65Ha At Girna River Bed Gut No.1 & 2, Dapore Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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## **ENVIRONMENTAL MANAGEMENT PLAN**

### **1 Introduction**

Ministry of Environment, Forest & Climate Change (MoEF&CC) Notification 2006 and Sustainable Sand Mining Management Guidelines 2016 and as per provision in Mines and Minerals (Development and Regulation) Act 1957 Schedule 60 section 15, Govt Of Maharashtra makes a Minor Mineral Extraction Rules 2013 to extract all the minor mineral in scientific way so that there is no adverse impact on Environment and Climate. To extract every minor mineral from any land (either Government or Private) there is provision of mining plan which is approved by competent authority; For long term leased minor mineral (5 – 10 years period) and Sand excavation from river bed, Senior Deputy Director of Directorate of Geology and Mining is a Competent authority, for short term Temporary permits which is valid for one year, Committee headed by Hon. Collector is Final authority to Approved the District Mining Plan.

As per Minor Mineral Extraction Rules 2013 Rules 70, Disposal of sand from River bed, Nallah and creeks by way of public auction, in this regards Govt resolution Gaukhni -10/0615/case No. 289/kha dated 3rd January 2018 is applicable in entire state. As per Enforcement & Monitoring Guidelines for Sand Mining 2020 Sustainable sand mining management guidelines 2016, Standard Environment condition for sand mining and sustainable mining practices, district level survey report should be prepared and area suitable for mining and area prohibited for mining be identified.

### **2 Project Description**

Dapore is a small Village in Jalgaon Taluka in Jalgaon District of Maharashtra State, India. It comes under Dapore Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 9.9KM towards N from District headquarters Jalgaon. The Sand Ghat is 348KM from State capital Mumbai.

The sand spot area is connected to approach road at a distance of 722m in South direction. Jalgaon Railway Station is present at a distance of 10km.

Area covered in SOI Toposheet No- 46P/5 and 46P/9. The GPS reading of boundary point are given below:

**Dapore sand spot over an extent of 1.65Ha At Girna River Bed Gut No.1 & 2, Dapore Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

**Table 1: Salient Features of the Project**

Items	Details															
Location	Village- Dapore, Tehsil- Jalgaon District-Jalgaon, Maharashtra.															
Latitude and Longitude	<table border="1"> <thead> <tr> <th>Boundary Points Dapore</th> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td>BP1</td> <td>20°55'38.36"N</td> <td>75°29'35.92"E</td> </tr> <tr> <td>BP2</td> <td>20°55'38.18"N</td> <td>75°29'33.33"E</td> </tr> <tr> <td>BP3</td> <td>20°55'45.31"N</td> <td>75°29'32.76"E</td> </tr> <tr> <td>BP4</td> <td>20°55'45.49"N</td> <td>75°29'35.35"E</td> </tr> </tbody> </table>	Boundary Points Dapore	Latitude	Longitude	BP1	20°55'38.36"N	75°29'35.92"E	BP2	20°55'38.18"N	75°29'33.33"E	BP3	20°55'45.31"N	75°29'32.76"E	BP4	20°55'45.49"N	75°29'35.35"E
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BP3	20°55'45.31"N	75°29'32.76"E														
BP4	20°55'45.49"N	75°29'35.35"E														
Sand spot area (In Ha)	1.65															
Proposed production capacity (In Brass)	2915															
Manpower Requirement (considering 3-month period)	26 labours +1 mate + 1Supervisor=28 manpower															
Infrastructure Requirement (As per Govt Resolution 3rd January 2018)	<ol style="list-style-type: none"> <li>1. Room / Hut for Official records</li> <li>2. Electricity / Battery for Running CCTV on 24X 7 daily.</li> <li>3. One Computer / Android base Mobile for the online generation of Invoice number.</li> </ol>															
Water requirement & source	6 KLD – Tankers from nearby village.															
Project cost INR (Lakh)	17.49 Lakhs															

***Dapore sand spot over an extent of 1.65Ha At Girna River Bed Gut No.1 & 2, Dapore Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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**3 Baseline Environmental Status**

**i. Topography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Amalner, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Amalner, Jalgaon, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Amalner, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 204 to 209 from MSL i.e 5m. The Highest contour value is 209 and lower is 204. The flow direction of GIRNA river is towards SW

**ii. Hydrology**

The will be no change in water table during mining operation, as the depth of mining shall be restricted to 0.5m water level, which is less likely to affect surface level or ground water table. There is no proposal of any stream modification/diversion due to this mining activity hence there will be no impact on flow of water.

***Dapore sand spot over an extent of 1.65Ha At Girna River Bed Gut No.1 & 2, Dapore Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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**iii. Soil Environment**

The area is not having any top soil or fertile soil. The depth of mining shall be restricted to 0.5m. There is no major impact on soil of the study area due to mining activities

**iv. Land Use Land Cover**

The project area does not consist of any forest land. It does not consist of any human habitations. Any change in scope of mining as per approved mining plan can lead to bank erosion /cutting and thereby river channel shifting degradation of land, causing loss of properties and degradation of surrounding landscape.

**v. Water Environment**

There will not be any waste water discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 0.5m only so there will not be any intersection with ground water table. It is observed from the dug well in the adjacent plain area and in the nearby villages that the ground water table varies depending upon seasonal variations. The depth to water levels in the district ranges from 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 0.5m that too within the river course and the total mining operation will be achieved through manual means, there will be no effect on ground water table. All the stipulations of MoEF for sand mining and guidelines as per the Maharashtra Minor Mineral Extraction [Development and Regulation] Rules, 2013 of Section 15 of MMDR Act 1957 [67 of 1957] will be followed. Hence, impact on water regime due to the proposed sand mining is not anticipated.

1. Precautionary measures will be initiated for closing the operation and shifting the men and transport vehicles prior to onset of monsoon.
2. No oils or lubricants will be discharged in the sand to avoid water pollution.

**vi. Climate**

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

**vii. Biological Environment**

The project is only of extraction of minor minerals viz. sand from the river quarry.

Flora: The area is completely barren and devoid of any vegetation in the river. Only few thorny bushes are seen on the banks of the River.

Fauna: As there is no forest cover, no wild life can be seen in this area.

1. There will be no significant impact of the river quarry mining project on the biological diversity found in the 5km. radius of the site.

***Dapore sand spot over an extent of 1.65Ha At Girna River Bed Gut No.1 & 2, Dapore Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.***

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2. The mining lease area is in non-forest land i.e. sandy river quarry where presence of fauna is not at all seen. As such, there will be no adverse impact of the manual mining activity on fauna around the mining lease area.

3. No adverse impacts will be envisaged on the existing aquatic fauna, on downstream side (away from site) as the mining confined to above water level only and at all touching/disturbing water table.

**viii. Socio-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

A. The mining operations will provide direct & indirect employment village people.

B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.

C. Local work force will be given first preference for employment.

D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area)

**4 Impact assessment report along with proposed mitigation measures.**

Preparation of Environmental Management Plan is required for formulation, implementation, and monitoring of environmental protection measures during and after commissioning of projects. The plan should indicate the details as to how various measures have been proposed to be taken including cost components as may be required.

**1. Land Environment**

The type of mining and the characteristics of the mineral deposit both affect the degree to which mining disturbs the landscape. Sand Mining and allied activities will be done in the fluvial plain formed by river meandering. Mining of sand may cause a few environmental degradations.

**a. Anticipated Impacts:**

- ❖ Damage of riverbank due to access ramps to riverbed, may cause soil erosion.
- ❖ Destruction of river bank hinterland and ecological due to extraction of sand by probability of damage to the flood control bunds (built along the river side) due to heavy movements of vehicles over the bund to approach the mine area and further during transportation for sand from the mine area.
- ❖ Improper disposal of packing material, carried by the workers like used sachet/ gutka /pan masala pouches.
- ❖ Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations, borehole users due to dust, noise and it also causes traffic hazards.
- ❖ Surface degradation due to road network.

**b. Mitigation Measures:**

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- ❖ Safety distance of 3 meter or 1/10th of the width of the river whichever is more will be left from both the banks of the river (as per “Sustainable sand mining guidelines”).
- ❖ No foreign material like polythene bag, jute bag and useless articles should be allowed to remain/spill in river bed and catchment area, or no pits/pockets will be allowed to be filled with such material.
- ❖ Minimum number of access roads to river bed for which cutting of river banks will be avoided and ramps are to be maintained.
- ❖ Care will be taken to ensure that ponding is not formed in the river bed.
- ❖ Mining will not exceed beyond the allowed extraction capacity.
- ❖ Green belt will be developed along the haul road and the bank of rivers of mine premises and near the sand mining site. While selecting the plant species, preference will be given for planting native species of the area.

**3. Water Environment**

**a. Anticipated Impacts:**

- ❖ As the project activity is carried out in the dry part of river bed, none of the project activities will affect the water environment or riverbank habitats. Project activities will not have any adverse effect on the physical components of the environment and therefore may not have any effect on the recharge of ground waters or affect the water quality. Monitoring of water quality will be checked yearly.

**b. Mitigation Measures:**

- ❖ Mining is avoided during the monsoon season and at the time of floods. This will help in replenishment of sand in the riverbed.
- ❖ Mining below subterranean water level will be avoided as safeguard against environmental contamination and over exploitation of resources.
- ❖ River stream will not be diverted to form in active channels.
- ❖ Utmost care will be taken to minimize or control leakage vehicles to be used for sand transportation.
- ❖ The washing of tractor trolleys in the river will be avoided.
- ❖ The contractor will follow all guidelines and rules for proper and scientific method of mining during the period of extracting the sand.

**4. Air Environment:**

**a. Anticipated Impacts:**

**Due to Haul Road/ Access Road:**

- ❖ Plying of tractor trolleys from public road to river sand collection points needs access roads.
- ❖ Majority of such access roads are the same existing roads/tracks being used by pedestrians/cart owners. Movement of heavy vehicles sometimes causes problems to cattle, agriculture land, and human habitations due to dust, noise and movement of public.
- ❖ These environmental problems are felt more as the area is rural in nature.

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**Due to Mining process:**

- ❖ Air pollution is likely to be caused at various stages of sand mining operations such as excavation, loading & transportation of material.
- ❖ Most of the dust will be generated from loading & transportation. This dust becomes air borne and gets carried away to surrounding areas.
- ❖ The impact on air is mainly localized in nature as the dust particles are not carried to longer distances and the effect is felt within the core zone of the project involving active Sand mining operations.

**b. Mitigation Measures:**

**Mitigation of Impacts on Access Roads:**

- ❖ Movement of the vehicles on the road will be increased; however, unmetalled road in the mining area will be sprinkled with water at regular intervals.
- ❖ In addition to prevent spillage by tractor trolleys over loading should be controlled along with speed limit (1Brass /tractor trolley).
- ❖ Maintenance of haul road will be done on regular basis.

**c. For Fugitive Dust Emission:**

- ❖ To avoid fugitive dust emissions at the time of excavation, regular sprinkling of water will be done on regular basis.
- ❖ Sand is transported to the sites by road through tractor trolleys. The sand carrying vehicles shall be covered by tarpaulin sheets.
- ❖ The Green Belt development will be prepared along the haul roads, which will act as a pollution sink.
- ❖ To minimize the vehicular pollution from the sand transporting vehicles, the following conditions will insist to permit the vehicles of the transporters.
- ❖ The vehicles should be (Bharat-IV stage) compliant and should have pollution control certificate (PUC) issued by appropriate authorities.
- ❖ Regular maintenance of transport vehicles and monitoring of vehicular emission levels at periodical intervals.

**5. Noise:**

**a. Anticipated Impacts:**

Noise environment in this project will be affected only by the equipment at the site and vehicular transportation. Since slight increase in noise levels can be expected.

**b. Mitigation Measures:**

- ❖ Minimum use of Horns at the village area.
- ❖ Timely maintenance of vehicles and their silencers to minimize vibration and Sound.
- ❖ Phasing out of old and worn-out tractor trolleys.
- ❖ Provision of green belts along the road networks.
- ❖ Care will be taken to produce minimum sound during sand loading.
- ❖ Use of Backhoe and ear plugs may be provided to protect the labors working at the site.



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**6. Socio-Economic Environment**

This project operation will provide livelihood to the poorest section of the society.

**Anticipated Impacts and Evaluation:**

- ❖ The project activities shall not have any adverse impacts on any of the common property resources of the village communities, as the sand mine lease area is not being used for any purpose by any section of the society in this region.
- ❖ There is no R & R involvement in this project.
- ❖ There is no land acquisition in this project.
- ❖ The results of the field survey conducted to understand the knowledge and perception of the people living around the project area gives a clear idea about the need for the project.
- ❖ A major portion of the houses in the study area are semi- pucca type structures.
- ❖ The water source to these areas is from the municipal connection and private bore wells and wells. The awareness level regarding the proposed mining activity is very high. The proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes.

**a. Social and Demographic Profile:**

The workers are from local villages. These people have been provided all welfare from a lessee like medical benefits, insurance, fees for children's education etc. They have some land and cattle for their daily earnings. Additional income earned from the Sand Mining work will improve their living standard. The group of quarries in and around will help to have infrastructure facilities like roads, schools, shops etc. This will improve their social life.

**b. Occupational Health and Safety:**

This is Riverbed Sand Mine. So, the mining activities are comparatively less because the production is not on large scale. Workers do not come across any extreme condition like excessive heat, moisture etc. Workers working around it may come across this dusty environment, which can be managed by providing face mask.

**c. Human Settlement:**

There are no houses in and around lease area. All the due precautions will be taken during mining. Transport of finished products is through the villages. There will be psychological impact of the traffic on the local people. However, the intensity of traffic is less.

**d. Health and Hygiene:**

In general, the health of villagers is moderately good. In the rainy season, the atmospheric condition is unhygienic due to lack of proper drainage and sanitation in the village habitation. Villagers are working in agricultural fields and work as laborers.

**e. Education:**

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- a. Mostly education is up to middle standard. Economic condition is in general moderate. So, after this project the standard of education will be increase.

**f. Socio Economic Benefits Arising Out of Mining:**

- a. Generation of employment in the rural area.
- b. Improvement in the living standards of the rural people.
- c. Creating of infrastructural facilities like roads, electricity, shops, school etc.
- d. Helping to improve literacy in the area Exploiting natural mineral so generation of revenue.
- e. Helping to sustain construction activity.
- f. Improving the greenery of the area, this is otherwise poor.

**g. Liquid Effluent:**

Not applicable because small mine and impacts are negligible.

**h. Solid Waste:**

Not applicable because small mine and impacts are negligible.

**6. Biological Environment**

**Anticipated Impacts:**

- ❖ **Aquatic environment-** Proposed mining of the dry bed of the river, so no possibility of disturbance of aquatic life.
- ❖ **Flora and Fauna-** The mining activity will have insignificant effect on the existing flora and fauna. The project area is surrounded with agricultural land. It was found that the sand mining activity will not have any significant impact on the biological environment of the region.

**Mitigation Measures:**

- ❖ Improvement in riverbank stability.
- ❖ Large woody debris in the riparian zone will be left undisturbed or replaced when moved and not be burnt.
- ❖ Vegetative debris will not be stored within the mine lease area.
- ❖ Operation and storage of heavy vehicles within riparian habitat will be restricted.
- ❖ Covering of loaded vehicles to reduce dust emission, which may harm surrounding agricultural crops and other plant species conservation of biological diversity of plants, birds, and animals.
- ❖ Greenbelt Development and Bio-Diversity Preservation Plantation activities will be carried out at the bank of the river and along the haul roads. This activity will help for maintaining ecology and environment of the area.

**5 Project Benefits**

The proposed expansion project will lead to the following benefits:

- Sand is available for Building and Construction work and by regular removal of sand there is no possibility of flood.

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- This project will contribute additional revenue to the state Exchequer in the form of revenue.
- The project will result in the employment opportunities to the unskilled/skilled local people. Thereby, the quality of life of the employed people will increase.

**6 Sand Ghat Closure Plan**

S. No	Head	Area put on. use at start of plan [in Ha]	Additional Requirement during Plan period [in Ha]	Total [in Ha]	Area considered as	Net consider for calculation
1	Area under mining / pit	-	1.65	1.65	1.65	1.65
2	Area under dump	NIL	---	---	---	---
3	Infrastructure Workshop Administrative Building etc.	--	--	--	--	--
4	Roads	--	--	--	--	--
5	Mineral reject	--	--	--	--	--
6	Green Belt Plantation /Soil dump	--	--	--	--	--
7	Tailing Dam /pond	--	--	--	--	--
8	Effluent Treatment Plant	--	--	--	--	--
9	Mineral storage	--	--	--	--	--
10	Township area	--	--	--	--	--
11	Other to specify	--	--	--	--	--
<b>GRAND TOTAL</b>			1.65	1.65	1.65	1.65

- ❖ Mining will be avoided during monsoon and floods; this will allow the sand deposit to replenish.
- ❖ Gabion structure will be constructed for the sand to replenish during monsoon season.

**7 Planning brief:**

**The proposed project is opencast manual sand mining activity.**

**Supply demand ratio:**

**Information required on demand and supply of district (2023-24)**

**Dapore sand spot over an extent of 1.65Ha At Girna River Bed Gut No.1 & 2, Dapore Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

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S.No.	Name of District	Total sand Demand of District in Brass	Total Sand Available in district in Brass
1	Jalgaon	191380	104531

**8 Compliance of earlier Environmental Clearance**

- ❖ Dapore sand spot of Dapore village of Jalgaon tehsil has got environmental clearance in the year 2014-2015 but the sand ghat did not get a response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot

**9 Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020.**

- ❖ District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- ❖ Appropriate feedback and its redressal mechanism shall also be made operational.
- ❖ Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- ❖ Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- ❖ The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- ❖ Printed on Indian Bank Association (IBA) Approved
- ❖ Magnetic Ink Character Recognition Code (MICR) paper
- ❖ Unique Barcode
- ❖ Unique Quick Response Code (QR)
- ❖ Fugitive Ink Background
- ❖ Invisible Ink Mark
- ❖ Void Pantograph
- ❖ Watermark
- ❖ GPS BASED VEHICLE TRACKING SYSTEM
- ❖ CCTV Camera

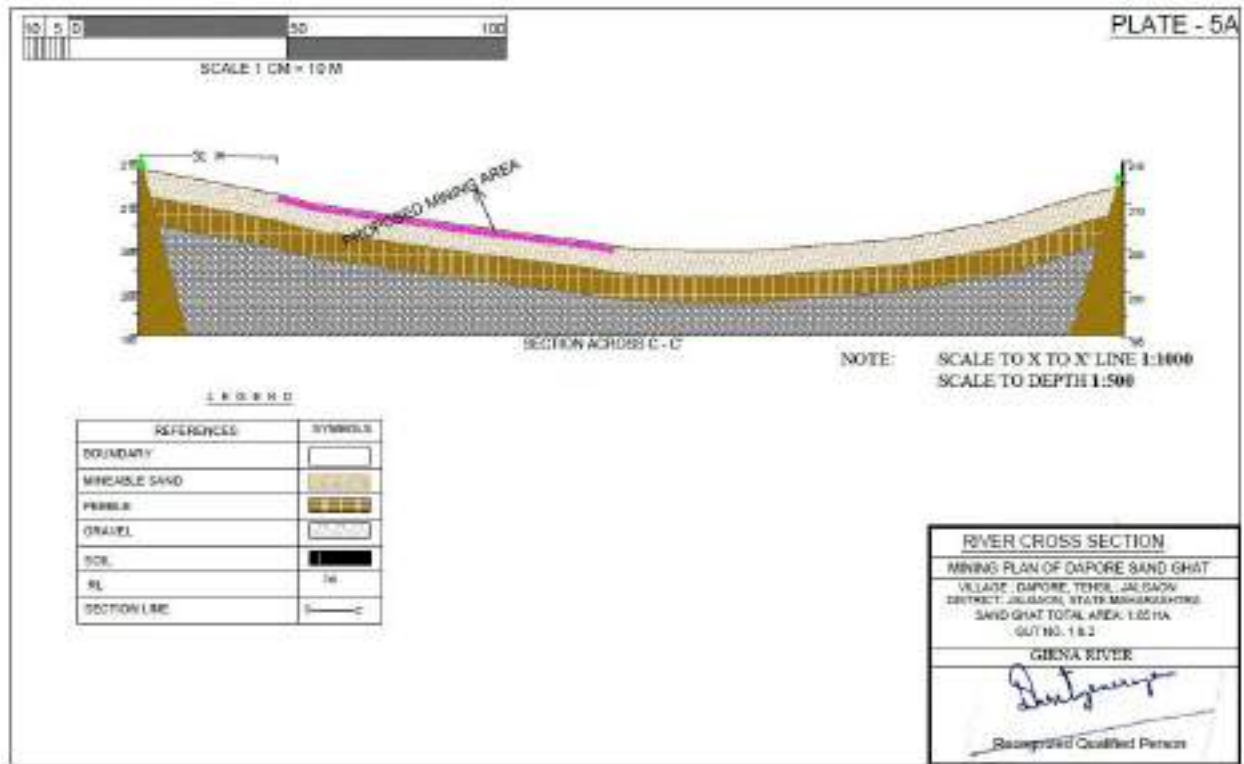


**Dapore sand spot over an extent of 1.65Ha At Girna River Bed Gut No.1 & 2, Dapore Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

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**12. Cross -Section of riverbed showing distance of proposed sand mine area from the riverbank and other details as prescribed in the Enforcement & Monitoring Guidelines for sand mining published in January 2020 by MoEF&CC.**

Cross section of riverbed is shown below:



**13. Details of District Level Task Force committee meetings and status of compliance of its recommendations if any.**

District Level Task Force Committee Meeting details is enclosed.

**14. Methodology for Sand Mining:**



***Dapore sand spot over an extent of 1.65Ha At Girna River Bed Gut No.1 & 2, Dapore Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.***

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**(Source: State Irrigation Department)**

**Conclusion:**

As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**16 PP to submit details of proposed plantation plan along with its location and requisite permission to be obtained from the Competent Authority.**

Plantation details are presented below:

<b>Location of greenbelt</b>	Both sides of approach road, On the riverbanks of both sides of the sand spot & nearby open areas. Haul Road outside riverbed.
<b>No. of plants to be planted</b>	676
<b>Spacing of plants</b>	4 m grid interval
<b>Species selected</b>	Native species

Tree species recommended for Plantation:

<b>Botanical name</b>	<b>Local name</b>	<b>Importance</b>
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

**17 BUDGET FOR CORPORATE ENVIRONMENT RESPONSIBILITY (CER)**

About 2% fund of the project cost is allocated for Corporate Environment Responsibility (CER) activities as presented in below Table:

<b>SNo.</b>	<b>Budget Allocated</b>	<b>Budget (In INR)</b>
1	Installation of one water tank in nearby village	80000



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2	Providing books and uniforms to nearby village school	25000
3	Needed Repairing work with consultation of Grampanchayat	25000
4	Community Infrastructure Development(Steel fencing to ZP school with consultation of Grampanchayat)	70000
Total		2,00,000

**18 Environmental Management Plan (EMP)**

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR**199000**and recurring cost provision of about INR **258940** has been kept in the project cost towards the environmental protection, control and mitigation measures and implementation of the EMP, this cost is born by bidder / lease holder. The budgetary cost estimate for the EMP is given in Table.

**Table 6: Environmental Budget**

			Dapore		
			EMP Budget		
SNo.	Component	Description	Capital cost Rs.	Recurring Cost Rs.	Total Cost in Rs
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	28300	28300
3	Approach Road Maintenance		-	22640	22640
4	Green Belt Plantation	Along the River Bank	27500	-	27500
		Along the Approach Road	141500	-	141500
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	5000	-	5000
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	30000	30000
7	Security	Display Boards and other security measures	10000	-	10000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health check-up (1000Rs./ Employee)	-	28000	28000
9	Tarpaulin Cover (5000 INR per one Cover)		15000	-	15000



### **FPRE-FEASIBILITY REPORT**

The Dapore Sand Spot is situated at Village Dapore , Taluka Jalgaon, District- Jalgaon. Sand Spot is 1.65Ha of area in Gut No 1&2 of Dapore village of Jalgaon Tehsil, Jalgaon district. Detail of the project is summarised below

- District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- District Collector Jalgaon appointed M/s Integrated Precision Systems & Services Pvt. Ltd., for preparation of Mining Plan and grant of environmental clearance.
- Applicant proposed to auction the said Sand Spot over an area of 1.65Ha area and identified for preparation of mining plan and for grant of Environmental Clearance.
- Mining Plans are prepared by Recognized Qualified Person and approved by Directorate of Geology & Mining Govt. of Maharashtra.
- About 2915 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Girna river bank.

#### **1. Physiography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 189 to 192 from MSL i.e 3m. The Highest contour value is 192 and lower is 189. The flow direction of GIRNA river is towards SW

#### **2. Local Geology**

The local geology is Sand of various size up to depth of 2.5- 3meter.

#### **3. Details of Exploration**

**Dapore sand spot over an extent of 1.65Ha At Girna River Bed Gut No.1 & 2, Dapore Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the river bed.

Mining - The mining will be continued with present method of open cast mining by cutting slice of 0.5m of Sand along topo-relief, by advancing from SW to NE direction as per allotted area by auction. The production can be at the rate of 8250 Cu.m or 2915 brass i.e. 1 year from the date of mining plan approval, the size of pit at the end will be 1.65Ha.

**Introduction of the project/ background information**

The Dapore Sand Spot has been kept for Auction which is situated at Village Dapore , Taluka Jalgaon , and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

**i) Brief description of project**

The Sand Spot has sufficient Reserve of Sand to work at 8250 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m area of Sand by advancing from North to South direction as per allotted Sand Spot area and handling of material with the help of labourer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**ii) Need for the project**

The Sand or Sand Spot under reference is aimed at exploring Sand as ROM in various sizes i.e. fine to Coarse grain which is Transported to consumer site in outside Sand Spot area, for the infrastructure development i.e. Construction activity to produce Concrete for putting in the floor, roof- slabs, Column, Pillars, Bridges & Dam construction.

**3. Project Description**

This mining project is an independent project and not an interlinked project.

**i) Location**

Dapore is a small Village in Jalgaon Taluka in Jalgaon District of Maharashtra State, India. It comes under Dapore Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 9.9KM towards N from District headquarters Jalgaon. The Sand Ghat is 348KM from State capital Mumbai. Area covered in SOI Toposheet No- 46P/5 and 46P/9

The boundary pillars of Sand Spot area are given below with GPS values.

<b>Boundary Points</b>	<b>Latitude</b>	<b>Longitude</b>
<b>Dapore</b>		
BP1	20°55'38.36"N	75°29'35.92"E
BP2	20°55'38.18"N	75°29'33.33"E

**Dapore sand spot over an extent of 1.65Ha At Girna River Bed Gut No.1 & 2, Dapore Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

BP3	20°55'45.31"N	75°29'32.76"E
BP4	20°55'45.49"N	75°29'35.35"E

**ii) Alternate Sites**

No alternate site is proposed.

**iii) Magnitude of Operation**

Proposed period for mining of sand will be decided by the office of district collectorate 8250 cu.m. will be excavated during the period.

**iv) Project description-mining details**

The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 220m L X 75m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable. The Sand Spot has sufficient Reserve of Sand to work at 8250 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m slice of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**v) Raw material, marketing & transport of ore**

The proposed sand spot will be auctioned, and successful bidder will be responsible for carrying out mining operations as per environmental terms and conditions, approved mining method as per approved mining plan and other terms and conditions. The loading of Sand generated to the tractor/tipper/dumpers will be done by loaders & material transported to the Dealer site.

**vi) Resource optimization, recycle, reuse**

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

**vii) Water & energy requirement**

The major water requirement in the lease area is for dust suppression and for drinking use. The total water requirement is estimated as 6 KLD the required water for dust suppression can be arranged through tankers from nearby village and drinking water will be provided in earthen pots for labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

**viii) Quantity of waste & scheme for management**

There will not be any waste generation within the lease area.

**ix) Schematic Representations**

It is a proposal of opencast manual sand mining from river bed. Mining plan is approved by the competent authority.

**4. Site Analysis**

**i) Connectivity**

Dapore is a small Village in Jalgaon Taluka in Jalgaon District of Maharashtra State, India.

The sand spot area is connected to approach road at a distance of 566 m in South direction. Jalgaon Railway Station is present at a distance of 10km.

**ii) Land Use, form & Ownership**

The ultimate land use pattern for the lease area of 1.65Ha. will be consisting of

- |                                    |   |          |
|------------------------------------|---|----------|
| 1. Mining Area                     | : | 1.65Ha.  |
| 2. Construction of Temporary Roads | : | 0.00 ha. |
| 3. Total                           | : | 1.65Ha.  |

At present ownership of this sand spot area is in the hand of Govt. of Maharashtra, after approval of mining plan and EC quarry area will be transfer to bidder after auction.

**iii) Geology**

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

**Existing land use pattern**

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

**Social-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- A. The mining operations will provide direct & indirect employment village people.
- B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- C. Local work force will be given first preference for employment.
- D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area).

**Planning brief:**

**The proposed project is opencast manual sand mining activity.**

**Supply demand ratio:**

**Dapore sand spot over an extent of 1.65Ha At Girna River Bed Gut No.1 & 2, Dapore Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

Information required on demand and supply of district (2023-24)			
S.No.	Name of District	Total sand Demand of District in Brass	Total Sand Available of district in Brass
1	Jalgaon	191380	104531

**Replenishment:**

- Area of deposition and erosion was calculated for each cross-section after giving due regard to stability & safety of active channel banks & other features of importance.
- DGPS and other survey tools have been used to define topography, contours and offsets of lease area.
- Contour & elevation benchmarks are provided with the baseline data for assessing pre and post-study period scenario.
- Physical benchmarks are fixed at intervals (1 in 30 m) & Reduced Levels (RL) are validated from a nearby standard RL.
- These RL are engraved on a steel plate (Bench Plate) & are fixed & placed at locations which are free from any damages & are available in pre and post-study period.
- Bench plates are available for use during the mining period as reference for all mining activity.
- Baseline data on elevation status for a grid of 10 m x 10 m is taken to ensure the accuracy in the assessment.
- It was made sure that two consecutive cross-sections in longitudinal and lateral direction is not be more than 10-meter distance apart.
- Changes have been observed in the elevation in pre and post scenario at each node and were depicted in graphical forms with an appropriate scale for estimating the area of deposition & erosion.
- Elevation level was placed in reference to the nearest bench-plates established for the purpose.
- The levels (MSL & RL) of corner point of each grid were identified and safety barriers (Non-Mining) are demarcated as restricted in consensus with Mineral Concession Rules of respective State, and the provision mentioned in this Sustainable Sand Mining Management Guidelines.
- A clear identification was highlighted between grids under mineable and grids under the non-mineable area. These baseline data (pre and post) was subjected to stimulation with the help of data mine software to derive at the replenishment area and corresponding volume and estimated weight.
- The database was structured in a tabulated form clearly depicting the nomenclature of the section lines, latitude and longitude of the starting point, chain-age and respective levels of all the points taken on that section line.
- Net area was derived after summation of area of deposition minus area of erosion for each cross-section.





- The sediment yield of Girna river at Girana dam station is  $4.612 \times 1020$  tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation..

**(Source: State Irrigation Department)**

**Conclusion:**

As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020**

- District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- Appropriate feedback and its redressal mechanism shall also be made operational.
- Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- Printed on Indian Bank Association (IBA) Approved
- Magnetic Ink Character Recognition Code (MICR) paper
- Unique Barcode
- Unique Quick Response Code (QR)
- Fugitive Ink Background
- Invisible Ink Mark
- Void Pantograph
- Watermark
- CCTV at mine lease site
- GPS Based Vehicle Tracking System

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided outside Sand Spot area.

**Compliance of earlier Environmental Clearance**

Dapori sand spot of Dapori village of Jalgaon tehsil has got environmental clearance in the year 2014-2015 but the sand spot did not get a response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot.

**7. Proposed Infrastructure**

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided in outside Sand Spot area.

**8. R&R Plan**

R&R is not involved.

**9. Project schedule**

Period of mining for the proposed sand spot will be decided by the Office of District Collectorate.

**10. Analysis of Proposal**

Description of the project included in items 1-10 above indicates the following:

1. It is proposed for opencast manual river sand mining.
2. Opencast mining without hampering the present environmental quality of the area.
3. Income to local people is uncertain & initiation of mining will ensure regular income to local people.

**11. Costing**

Costing parameters will be decided by the District Authorities.

**12. Compliance to Environment Clearance**

Whether there are any serious violation of safety rules and regulation which may jeopardize human health and safety. If so, give details of violations and state the steps proposed to be taken with the time scheduled to rectify the violations:

No, there are not any serious violation of safety rules and regulation, which may jeopardize human health and safety. The applicant has given a commitment in this effect and undertaking also given to follow and implement, as specified in the mining plan. The applicant is undertake to abide and implement any special conditions imposed by various authorities and also to complete formalities under provision of the Mines & Mineral (Development & Regulation) Act, 1957 and the Bombay Minor Mineral rules, the Mineral Conservation and Development Rules, 1988 as amended, the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule 2013, MoEF&CC Notification S.O. 141 (E) dated 15th January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, Sustainable Sand Mining Management Guidelines 2019, Sand Mining Policy 2020

**13. Any Other Information:**

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

***Dapore sand spot over an extent of 1.65Ha At Girna River Bed Gut No.1 & 2, Dapore Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.***

These things will be religiously followed and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule-2013, MoEF&CC Notification S.O. 141 (E) dated 15<sup>th</sup> January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.05.1994 and 04.09.2006.

**Risk Assessment for Dapore Sand Spot**

**1. Introduction**

A main principle of risk assessment is that it should take place before any changes are made. Risks should be assessed and control measures are put into action before new work is introduced or systems are changed. The process should influence budgets and allocation of resources, rather than being an afterthought when the decisions have already been made.

The risk management process is continuous, with well-defined steps that support better decision making by contributing greater insight into risks and their impacts. Risks from all sources are identified and once they pass the materiality threshold, a formal process begins in which causal factors and consequences are identified and the correlation with other risks and the current risk mitigating strategy is reviewed. One of the challenges is to ensure that mitigating strategies are geared to deliver reliable and timely risk information to support better decision-making.



The mining operations at DAPORE SAND SPOT are subjected to the risks and hazards normally encountered in open-cast mining operations. These risks include operational risks relating to

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materials handling, accidents, removing material from quarry area. Mining processes also rely on key inputs, for example fuel. Appropriate insurance can provide protection from some, but not all, the costs that may arise from unforeseen events. If any of these risks should materialize, such an event could result in serious harm to employees and contractors, delays in production, increased production costs and possible increase in liabilities.

Disruption to the supply of key inputs, or changes in their pricing, may have a material and adverse impact on DAPORE SAND SPOT asset values, costs, earnings and cash flows. Failure to meet production target results in increased unit costs. The impact is more pronounced at operations with a high level of fixed costs. Mitigation strategies include efforts to secure strategic supplies at competitive prices, energy reduction, and application of group water management guidelines, adoption of lean production principles and practices and business improvement initiatives to reduce unit costs.

There are certain aspects which should be taken care of, in a quarrying plan with accordance of risk management.

<b>Components</b>	<b>Risk Involved</b>
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
Fire	Only trucks and tractors will make use of diesel for transportation. Diesel is not so highly inflammable but accidental fires can take place.
Road Accidents	Vehicles are used for transporting the material from quarry area to the buyer's location. Due to some improper maintenance of the vehicle a road accident can occur leading to fatal results.

To minimize the risk, certain measures can be taken like implying safety rules, facilities of basic first aid near the site and having training for the workers about personal safety.

Disaster Management Plan is envisaged with a goal to prevent hazards and accidents at work places by careful design, operation, and maintenance of equipment's. All safety precautions and provisions of Metalliferous Mines Regulation-1961 will be strictly followed. Suitable control measures will be adopted to take care of hazards/disasters that may occur during mining operation.

- No mining activities during rainy days or just after heavy rain.
  - Fire fighting, first aid provisions & safety appliances will be made available to the staff and their use regularly checked
  - Regular maintenance of all haulage roads & mining machinery as per manufacturer's guidelines will be done
-

**APPENDIX VIII  
(See paragraph 6)**

**FORM 1 M**

**APPLICATION FOR MINING OF MINOR MINERALS UNDER CATEGORY 'B2' FOR LESS THAN AND EQUAL TO FIVE HECTARE**

**(I) Basic Information**

(i) Name of the Mining Lease site: Dev Pimpri - Kumbhari Sim Sand Spot

(ii) Location / site (GPS Co-ordinates):

Boundary Points Dev Pimpri - Kumbhari Sim	Latitude	Longitude
BP1	20°49'18.85"N	75°38'34.67"E
BP2	20°49'18.58"N	75°38'32.97"E
BP3	20°49'25.83"N	75°38'31.68"E
BP4	20°49'33.57"N	75°38'27.53"E
BP5	20°49'34.30"N	75°38'29.08"E
BP6	20°49'26.36"N	75°38'33.34"E

(iii) Size of the Mining Lease (Hectare): 2.5HA

(vi) Capacity of Mining Lease (TPA): 7067 Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 42.40 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, Maharashtra

**(II) Environmental Sensitivity**

S. No.	Areas	Distance in Kilometer/Details
1	Distance of project site from nearest rail or road bridge over the concerned River, Rivulet, Nallah etc.	Bridge on SH-186, 3.13Km, NE
2	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road	Jalgaon Railway station, 21 Km, N No NH Highway, 1.86Km, E 1.1Km,E

	Any Other Road Electric transmission line pole or tower Canal or check dam or reservoirs or lake or ponds In-take for drinking water pump house Intake for Irrigation canal pumps	1.24Km, E ET, 0.86Km, E Check Dam, 2.53Km, NE Nil Nil
3	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil
4	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Water bodies: this is the case of river sand mining in Waghur River bed; RF,5.90Km, W
5	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil
6	Inland, coastal, marine or underground waters	Waghur River bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	No NH Highway, 1.86Km, E
9	Defence installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Dev Pimpri, 390m, NW
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	School 2.21Km, S Hospital, 3.2 Km,N
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Waghur River Bed ( this is the case of river sand mining) RF,5.9Km, w
13	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil

14	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	The mine lease area falls in Seismic Zone III (Moderate), according to the Indian Standard Seismic Zoning Map.
15	Is proposed mining site located over or near fissure / fracture for ground water recharge	No
16	Whether the proposal involves approval or clearance under the following Regulations or Acts, namely:- (a) The Forest (Conservation) Act, 1980; (b) The Wildlife (Protection) Act, 1972; (c) The Coastal Regulation Zone Notification, 2011. If yes, details of the same and their status to be given.	No
17	Forest land involved (hectares)	Nil
18	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Orders or directions of the Court, if any, and its relevance with the proposed project.	Nil



*Dev Pimpri - Kumbhari Sim sand spot over an extent of 2.5Ha At Waghur River Bed Gut No.Dev Pimpri - 416, 420, 418, 415 & Kumbhari Sim - 34, 35, 26, 25, 12 & 13 , Dev Pimpri - Kumbhari Sim Village, Tehsil- Jamner, Jalgaon District, Maharashtra.*

***Environmental Management Plan***

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## ENVIRONMENTAL MANAGEMENT PLAN

### 1 Introduction

Ministry of Environment, Forest & Climate Change (MoEF&CC) Notification 2006 and Sustainable Sand Mining Management Guidelines 2016 and as per provision in Mines and Minerals (Development and Regulation) Act 1957 Schedule 60 section 15, Govt Of Maharashtra makes a Minor Mineral Extraction Rules 2013 to extract all the minor mineral in scientific way so that there is no adverse impact on Environment and Climate. To extract every minor mineral from any land (either Government or Private) there is provision of mining plan which is approved by competent authority; For long term leased minor mineral (5 – 10 years period) and Sand excavation from river bed, Senior Deputy Director of Directorate of Geology and Mining is a Competent authority, for short term Temporary permits which is valid for one year, Committee headed by Hon. Collector is Final authority to Approved the District Mining Plan.

As per Minor Mineral Extraction Rules 2013 Rules 70, Disposal of sand from River bed, Nallah and creeks by way of public auction, in this regards Govt resolution Gaukhni -10/0615/case No. 289/kha dated 3rd January 2018 is applicable in entire state. As per Enforcement & Monitoring Guidelines for Sand Mining 2020 Sustainable sand mining management guidelines 2016, Standard Environment condition for sand mining and sustainable mining practices, district level survey report should be prepared and area suitable for mining and area prohibited for mining be identified.

### 2 Project Description

Dev Pimpri - Kumbhari Sim are small Village in Taluka in Jalgaon District of Maharashtra State, India. It comes under Dev Pimpri - Kumbhari Sim Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 21 KM towards SW from District headquarters Jalgaon. The Sand Ghat is 341 KM from State capital Mumbai.

The sand spot area is connected to approach road at a distance of 457m in South direction. Jalgaon Railway Station is present at a distance of 21 km.

Area covered in SOI Toposheet No- 46P/9.

The GPS reading of boundary point are given below:

*Dev Pimpri - Kumbhari Sim sand spot over an extent of 2.5Ha At Waghur River Bed Gut No.Dev Pimpri - 416, 420, 418, 415 & Kumbhari Sim - 34, 35, 26, 25, 12 & 13 , Dev Pimpri - Kumbhari Sim Village, Tehsil- Jamner, Jalgaon District, Maharashtra.*

**Environmental Management Plan**

**Table 1: Salient Features of the Project**

Items	Details																					
Location	Village- Dev Pimpri - Kumbhari Sim, Tehsil- Jamner District- Jalgaon, Maharashtra.																					
Latitude and Longitude	<table border="1"> <thead> <tr> <th>Boundary Points Dev Pimpri - Kumbhari Sim</th> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td>BP1</td> <td>20°49'18.85"N</td> <td>75°38'34.67"E</td> </tr> <tr> <td>BP2</td> <td>20°49'18.58"N</td> <td>75°38'32.97"E</td> </tr> <tr> <td>BP3</td> <td>20°49'25.83"N</td> <td>75°38'31.68"E</td> </tr> <tr> <td>BP4</td> <td>20°49'33.57"N</td> <td>75°38'27.53"E</td> </tr> <tr> <td>BP5</td> <td>20°49'34.30"N</td> <td>75°38'29.08"E</td> </tr> <tr> <td>BP6</td> <td>20°49'26.36"N</td> <td>75°38'33.34"E</td> </tr> </tbody> </table>	Boundary Points Dev Pimpri - Kumbhari Sim	Latitude	Longitude	BP1	20°49'18.85"N	75°38'34.67"E	BP2	20°49'18.58"N	75°38'32.97"E	BP3	20°49'25.83"N	75°38'31.68"E	BP4	20°49'33.57"N	75°38'27.53"E	BP5	20°49'34.30"N	75°38'29.08"E	BP6	20°49'26.36"N	75°38'33.34"E
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Sand spot area (In Ha)	2.5																					
Proposed production capacity (In Brass)	7067																					
Manpower Requirement (considering 3-month period)	58 labours +3 mate + 3 Supervisor=63 manpower																					
Infrastructure Requirement (As per Govt Resolution 3rd January 2018)	1. Room / Hut for Official records 2. Electricity / Battery for Running CCTV on 24X 7 daily. 3. One Computer / Android base Mobile for the online generation of Invoice number.																					
Water requirement & source	3.2 KLD – Tankers from nearby village.																					
Project cost INR (Lakh)	42.40 Lakhs																					

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### **Environmental Management Plan**

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## **3 Baseline Environmental Status**

### **i. Topography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Amalner, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Amalner, Dharagaon, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Amalner, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 260 to 264 from MSL i.e 4m. The Highest contour value is 264 and lower is 260. The flow direction of Waghur river is towards SW .

### **ii. Hydrology**

The will be no change in water table during mining operation, as the depth of mining shall be restricted to 0.5m water level, which is less likely to affect surface level or ground water table. There is no

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### **Environmental Management Plan**

proposal of any stream modification/diversion due to this mining activity hence there will be no impact on flow of water.

#### **iii. Soil Environment**

The area is not having any top soil or fertile soil. The depth of mining shall be restricted to 0.5m. There is no major impact on soil of the study area due to mining activities

#### **iv. Land Use Land Cover**

The project area does not consist of any forest land. It does not consist of any human habitations. Any change in scope of mining as per approved mining plan can lead to bank erosion /cutting and thereby river channel shifting degradation of land, causing loss of properties and degradation of surrounding landscape.

#### **v. Water Environment**

There will not be any waste water discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 0.5m only so there will not be any intersection with ground water table. It is observed from the dug well in the adjacent plain area and in the nearby villages that the ground water table varies depending upon seasonal variations. The depth to water levels in the district ranges from 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 0.5m that too within the river course and the total mining operation will be achieved through manual means, there will be no effect on ground water table. All the stipulations of MoEF for sand mining and guidelines as per the Maharashtra Minor Mineral Extraction [Development and Regulation] Rules, 2013 of Section 15 of MMDR Act 1957 [67 of 1957] will be followed. Hence, impact on water regime due to the proposed sand mining is not anticipated.

1. Precautionary measures will be initiated for closing the operation and shifting the men and transport vehicles prior to onset of monsoon.
2. No oils or lubricants will be discharged in the sand to avoid water pollution.

#### **vi. Climate**

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

#### **vii. Biological Environment**

The project is only of extraction of minor minerals viz. sand from the river quarry.

Flora: The area is completely barren and devoid of any vegetation in the river. Only few thorny bushes are seen on the banks of the River.

Fauna: As there is no forest cover, no wild life can be seen in this area.

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### **Environmental Management Plan**

1. There will be no significant impact of the river quarry mining project on the biological diversity found in the 5km. radius of the site.
2. The mining lease area is in non-forest land i.e. sandy river quarry where presence of fauna is not at all seen. As such, there will be no adverse impact of the manual mining activity on fauna around the mining lease area.
3. No adverse impacts will be envisaged on the existing aquatic fauna, on downstream side (away from site) as the mining confined to above water level only and at all touching/disturbing water table.

### **viii. Socio-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- A. The mining operations will provide direct & indirect employment village people.
- B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- C. Local work force will be given first preference for employment.
- D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area)

## **4 Impact assessment report along with proposed mitigation measures.**

Preparation of Environmental Management Plan is required for formulation, implementation, and monitoring of environmental protection measures during and after commissioning of projects. The plan should indicate the details as to how various measures have been proposed to be taken including cost components as may be required.

### **1. Land Environment**

The type of mining and the characteristics of the mineral deposit both affect the degree to which mining disturbs the landscape. Sand Mining and allied activities will be done in the fluvial plain formed by river meandering. Mining of sand may cause a few environmental degradations.

#### **a. Anticipated Impacts:**

- ❖ Damage of riverbank due to access ramps to riverbed, may cause soil erosion.
- ❖ Destruction of river bank hinterland and ecological due to extraction of sand by probability of damage to the flood control bunds (built along the river side) due to heavy movements of vehicles over the bund to approach the mine area and further during transportation for sand from the mine area.
- ❖ Improper disposal of packing material, carried by the workers like used sachet/ gutka /pan masala pouches.

*Dev Pimpri - Kumbhari Sim sand spot over an extent of 2.5Ha At Waghur River Bed Gut No.Dev Pimpri - 416, 420, 418, 415 & Kumbhari Sim - 34, 35, 26, 25, 12 & 13 , Dev Pimpri - Kumbhari Sim Village, Tehsil- Jamner, Jalgaon District, Maharashtra.*

### **Environmental Management Plan**

- ❖ Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations, borehole users due to dust, noise and it also causes traffic hazards.
- ❖ Surface degradation due to road network.

#### **b. Mitigation Measures:**

- ❖ Safety distance of 3 meter or 1/10th of the width of the river whichever is more will be left from both the banks of the river (as per “Sustainable sand mining guidelines”).
- ❖ No foreign material like polythene bag, jute bag and useless articles should be allowed to remain/spill in river bed and catchment area, or no pits/pockets will be allowed to be filled with such material.
- ❖ Minimum number of access roads to river bed for which cutting of river banks will be avoided and ramps are to be maintained.
- ❖ Care will be taken to ensure that ponding is not formed in the river bed.
- ❖ Mining will not exceed beyond the allowed extraction capacity.
- ❖ Green belt will be developed along the haul road and the bank of rivers of mine premises and near the sand mining site. While selecting the plant species, preference will be given for planting native species of the area.

### **3. Water Environment**

#### **a. Anticipated Impacts:**

- ❖ As the project activity is carried out in the dry part of river bed, none of the project activities will affect the water environment or riverbank habitats. Project activities will not have any adverse effect on the physical components of the environment and therefore may not have any effect on the recharge of ground waters or affect the water quality. Monitoring of water quality will be checked yearly.

#### **b. Mitigation Measures:**

- ❖ Mining is avoided during the monsoon season and at the time of floods. This will help in replenishment of sand in the riverbed.
- ❖ Mining below subterranean water level will be avoided as safeguard against environmental contamination and over exploitation of resources.
- ❖ River stream will not be diverted to form in active channels.
- ❖ Utmost care will be taken to minimize or control leakage vehicles to be used for sand transportation.
- ❖ The washing of tractor trolleys in the river will be avoided.
- ❖ The contractor will follow all guidelines and rules for proper and scientific method of mining during the period of extracting the sand.

### **4. Air Environment:**

#### **a. Anticipated Impacts:**

**Due to Haul Road/ Access Road:**

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#### **Environmental Management Plan**

- ❖ Plying of tractor trolleys from public road to river sand collection points needs access roads.
- ❖ Majority of such access roads are the same existing roads/tracks being used by pedestrians/cart owners. Movement of heavy vehicles sometimes causes problems to cattle, agriculture land, and human habitations due to dust, noise and movement of public.
- ❖ These environmental problems are felt more as the area is rural in nature.

#### **Due to Mining process:**

- ❖ Air pollution is likely to be caused at various stages of sand mining operations such as excavation, loading & transportation of material.
- ❖ Most of the dust will be generated from loading& transportation. This dust becomes air borne and gets carried away to surrounding areas.
- ❖ The impact on air is mainly localized in nature as the dust particles are not carried to longer distances and the effect is felt within the core zone of the project involving active Sand mining operations.

#### **b. Mitigation Measures:**

##### **Mitigation of Impacts on Access Roads:**

- ❖ Movement of the vehicles on the road will be increased; however, unmetalled road in the mining area will be sprinkled with water at regular intervals.
- ❖ In addition to prevent spillage by tractor trolleys over loading should be controlled along with speed limit (1Brass /tractor trolley).
- ❖ Maintenance of haul road will be done on regular basis.

#### **c. For Fugitive Dust Emission:**

- ❖ To avoid fugitive dust emissions at the time of excavation, regular sprinkling of water will be done on regular basis.
- ❖ Sand is transported to the sites by road through tractor trolleys. The sand carrying vehicles shall be covered by tarpaulin sheets.
- ❖ The Green Belt development will be prepared along the haul roads, which will act as a pollution sink.
- ❖ To minimize the vehicular pollution from the sand transporting vehicles, the following conditions will insist to permit the vehicles of the transporters.
- ❖ The vehicles should be (Bharat-IV stage) compliant and should have pollution control certificate (PUC) issued by appropriate authorities.
- ❖ Regular maintenance of transport vehicles and monitoring of vehicular emission levels at periodical intervals.

#### **5. Noise:**

##### **a. Anticipated Impacts:**

Noise environment in this project will be affected only by the equipment at the site and vehicular transportation. Since slight increase in noise levels can be expected.

##### **b. Mitigation Measures:**

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#### **Environmental Management Plan**

- ❖ Minimum use of Horns at the village area.
- ❖ Timely maintenance of vehicles and their silencers to minimize vibration and Sound.
- ❖ Phasing out of old and worn-out tractor trolleys.
- ❖ Provision of green belts along the road networks.
- ❖ Care will be taken to produce minimum sound during sand loading.
- ❖ Use of Backhoe and ear plugs may be provided to protect the labors working at the site.

#### **6. Socio-Economic Environment**

This project operation will provide livelihood to the poorest section of the society.

##### **Anticipated Impacts and Evaluation:**

- ❖ The project activities shall not have any adverse impacts on any of the common property resources of the village communities, as the sand mine lease area is not being used for any purpose by any section of the society in this region.
- ❖ There is no R & R involvement in this project.
- ❖ There is no land acquisition in this project.
- ❖ The results of the field survey conducted to understand the knowledge and perception of the people living around the project area gives a clear idea about the need for the project.
- ❖ A major portion of the houses in the study area are semi- pucca type structures.
- ❖ The water source to these areas is from the municipal connection and private bore wells and wells. The awareness level regarding the proposed mining activity is very high. The proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes.

##### **a. Social and Demographic Profile:**

The workers are from local villages. These people have been provided all welfare from a lessee like medical benefits, insurance, fees for children's education etc. They have some land and cattle for their daily earnings. Additional income earned from the Sand Mining work will improve their living standard. The group of quarries in and around will help to have infrastructure facilities like roads, schools, shops etc. This will improve their social life.

##### **b. Occupational Health and Safety:**

This is Riverbed Sand Mine. So, the mining activities are comparatively less because the production is not on large scale. Workers do not come across any extreme condition like excessive heat, moisture etc. Workers working around it may come across this dusty environment, which can be managed by providing face mask.

##### **c. Human Settlement:**



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### **Environmental Management Plan**

There are no houses in and around lease area. All the due precautions will be taken during mining. Transport of finished products is through the villages. There will be psychological impact of the traffic on the local people. However, the intensity of traffic is less.

**d. Health and Hygiene:**

In general, the health of villagers is moderately good. In the rainy season, the atmospheric condition is unhygienic due to lack of proper drainage and sanitation in the village habitation. Villagers are working in agricultural fields and work as laborers.

**e. Education:**

a. Mostly education is up to middle standard. Economic condition is in general moderate. So, after this project the standard of education will be increase.

**f. Socio Economic Benefits Arising Out of Mining:**

- a. Generation of employment in the rural area.
- b. Improvement in the living standards of the rural people.
- c. Creating of infrastructural facilities like roads, electricity, shops, school etc.
- d. Helping to improve literacy in the area Exploiting natural mineral so generation of revenue.
- e. Helping to sustain construction activity.
- f. Improving the greenery of the area, this is otherwise poor.

**g. Liquid Effluent:**

Not applicable because small mine and impacts are negligible.

**h. Solid Waste:**

Not applicable because small mine and impacts are negligible.

## **6. Biological Environment**

### **Anticipated Impacts:**

- ❖ **Aquatic environment-** Proposed mining of the dry bed of the river, so no possibility of disturbance of aquatic life.
- ❖ **Flora and Fauna-** The mining activity will have insignificant effect on the existing flora and fauna. The project area is surrounded with agricultural land. It was found that the sand mining activity will not have any significant impact on the biological environment of the region.

### **Mitigation Measures:**

- ❖ Improvement in riverbank stability.
- ❖ Large woody debris in the riparian zone will be left undisturbed or replaced when moved and not be burnt.
- ❖ Vegetative debris will not be stored within the mine lease area.
- ❖ Operation and storage of heavy vehicles within riparian habitat will be restricted.

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### Environmental Management Plan

- ❖ Covering of loaded vehicles to reduce dust emission, which may harm surrounding agricultural crops and other plant species conservation of biological diversity of plants, birds, and animals.
- ❖ Greenbelt Development and Bio-Diversity Preservation Plantation activities will be carried out at the bank of the river and along the haul roads. This activity will help for maintaining ecology and environment of the area.

## 5 Project Benefits

The proposed expansion project will lead to the following benefits:

- Sand is available for Building and Construction work and by regular removal of sand there is no possibility of flood.
- This project will contribute additional revenue to the state Exchequer in the form of revenue.
- The project will result in the employment opportunities to the unskilled/skilled local people.

Thereby, the quality of life of the employed people will increase.

## 6 Sand Ghat Closure Plan

S. No	Head	Area put on. use at start of plan [in Ha]	Additional Requirement during Plan period [in Ha]	Total [in Ha]	Area considered as	Net consider for calculation
1	Area under mining / pit	-	2.5	2.5	2.5	2.5
2	Area under dump	NIL	---	---	---	---
3	Infrastructure Workshop Administrative Building etc.	--	--	--	--	--
4	Roads	--	--	--	--	--
5	Mineral reject	--	--	--	--	--
6	Green Belt Plantation /Soil dump	--	--	--	--	--
7	Tailing Dam /pond	--	--	--	--	--
8	Effluent Treatment Plant	--	--	--	--	--
9	Mineral storage	--	--	--	--	--
10	Township area	--	--	--	--	--
11	Other to specify	--	--	--	--	--
<b>GRAND TOTAL</b>			2.5	2.5	2.5	2.5

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#### **Environmental Management Plan**

- ❖ Mining will be avoided during monsoon and floods; this will allow the sand deposit to replenish.
- ❖ Gabion structure will be constructed for the sand to replenish during monsoon season.

#### **7 Planning brief:**

The proposed project is opencast manual sand mining activity.

Supply demand ratio:

<b>Information required on demand and supply of district (2023-24)</b>			
<b>S.No.</b>	<b>Name of District</b>	<b>Total sand Demand of District in Brass</b>	<b>Total Sand Available in district in Brass</b>
1	Jalgaon	191380	104531

#### **8 Compliance of earlier Environmental Clearance**

- ❖ Dev Pimpri - Kumbhari Sim is a new mine. Hence there is no Earlier environmental compliance.

#### **9 Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020.**

- ❖ District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- ❖ Appropriate feedback and its redressal mechanism shall also be made operational.
- ❖ Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- ❖ Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- ❖ The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- ❖ Printed on Indian Bank Association (IBA) Approved
- ❖ Magnetic Ink Character Recognition Code (MICR) paper
- ❖ Unique Barcode
- ❖ Unique Quick Response Code (QR)
- ❖ Fugitive Ink Background

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**Environmental Management Plan**

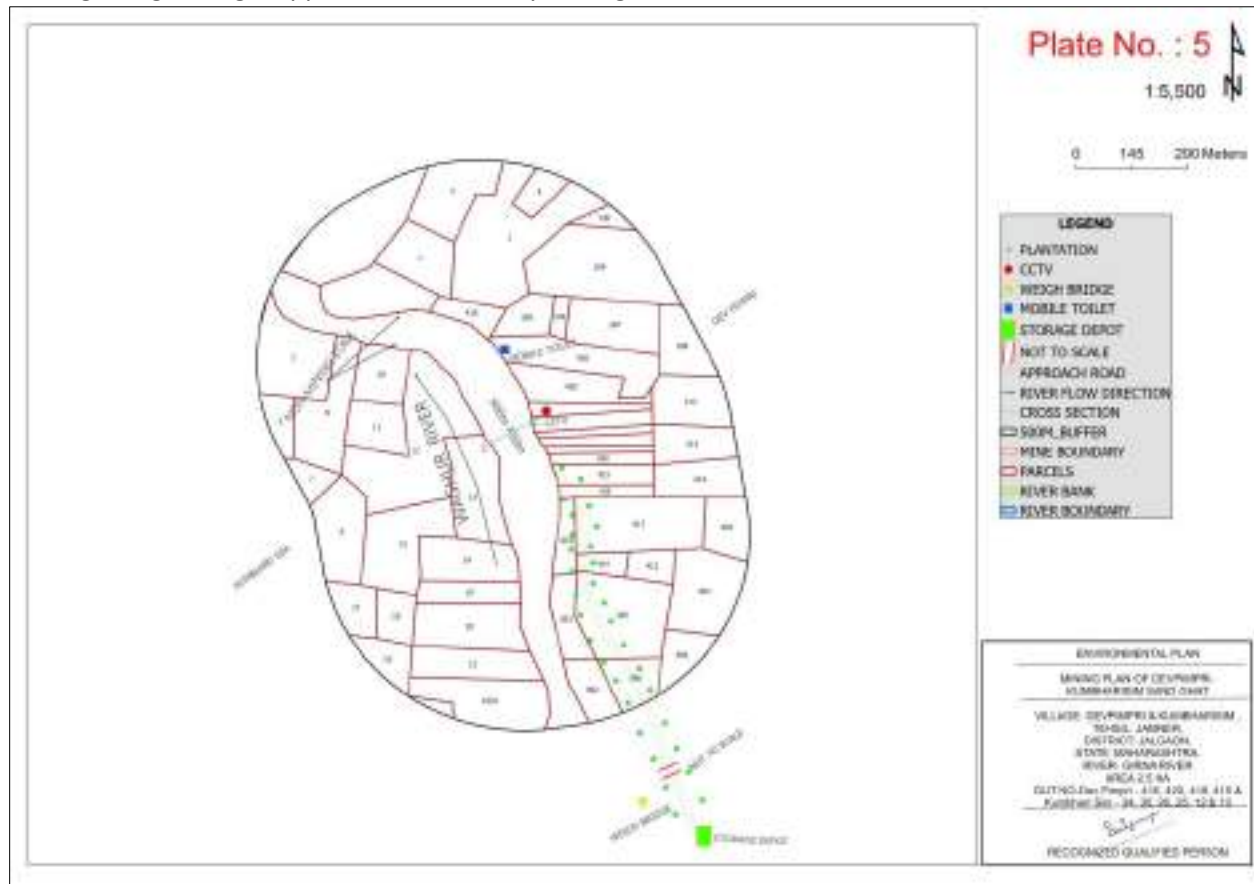
- ❖ Invisible Ink Mark
- ❖ Void Pantograph
- ❖ Watermark
- ❖ GPS BASED VEHICLE TRACKING SYSTEM
- ❖ CCTV Camera

Cluster certificate with reference to the EIA Notification 2006 amended from time to time with specific remarks on the cluster formation in the periphery of the proposed sand ghat along with area map showing distances between adjoining sand mine areas.

Dev Pimpri - Kumbhari Sim does not form a cluster.

**10 Layout of proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc.**

Proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc. layout is given below:



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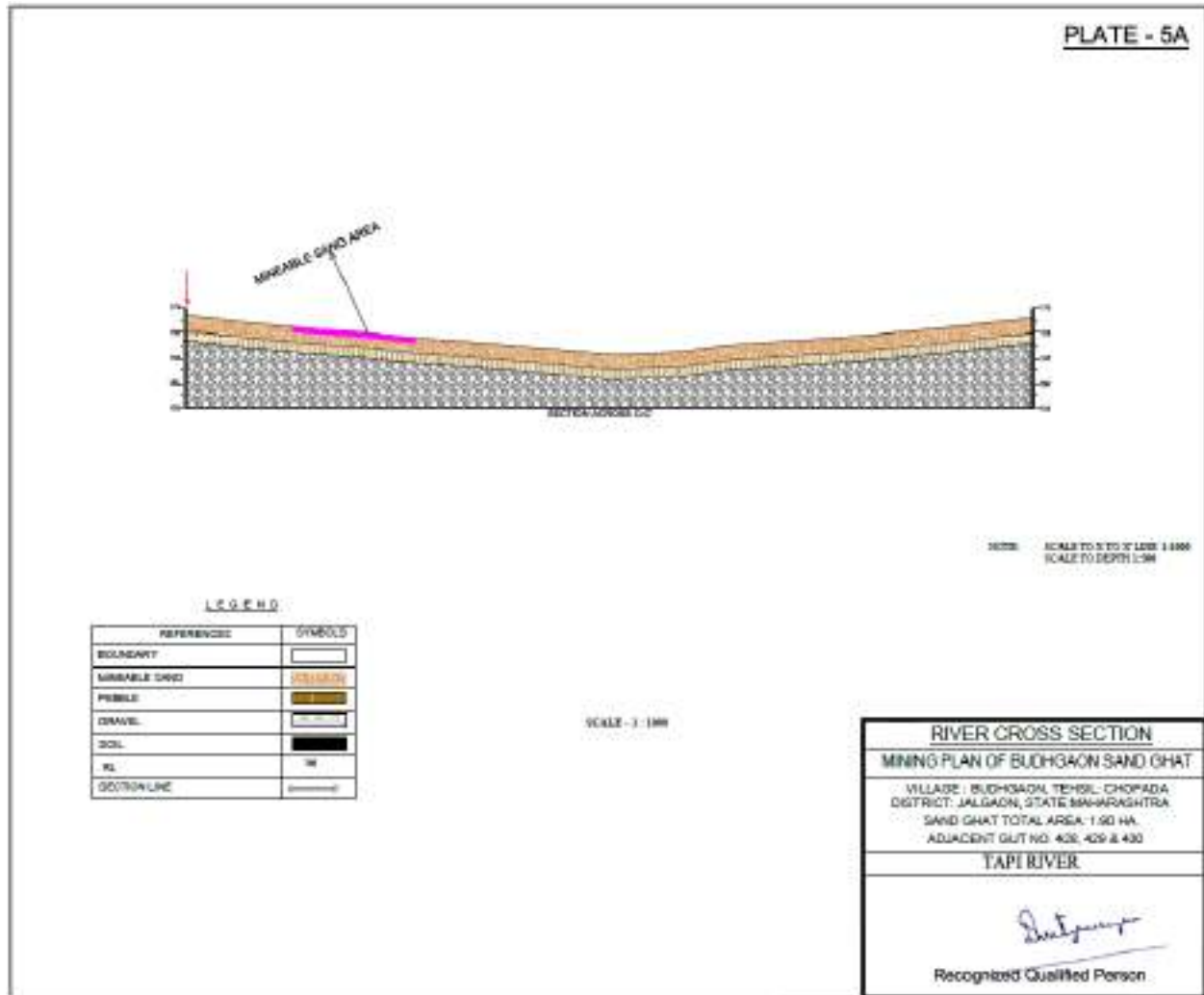
**Environmental Management Plan**

**11. Proposed approach road for transport of mined sand from sand ghat to the storage area and consent of storage area from the concerned landowners is an after-auction activity to use their land as approach road.**

The proposed approach road length is at 457m and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the river bank. Consent of road submitted by Jamner Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from land owner.

**12. Cross -Section of riverbed showing distance of proposed sand mine area from the riverbank and other details as prescribed in the Enforcement & Monitoring Guidelines for sand mining published in January 2020 by MoEF&CC.**

Cross section of riverbed is shown below:





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**Environmental Management Plan**

**DANDY-BOLTON EQUATION**

**1. For Runoff Less Than 2 Inches**

$$S = 1280 * (Q)^{0.46} * (16 - 0.26 \log(A)) * F$$

**2. For Runoff More Than 2 Inches**

$$S = 1958 * (Q)^{(e - 0.055 * Q)} * (13 - 0.26 \log(A))$$

Where

S = sediment yield of stream (t/yr./km<sup>2</sup>),

Q = average annual runoff (m<sup>3</sup>),

A = net drainage area in sq. Mile

The sediment yield of of Waghur river a tributary of Tapi river at Hatnur dam station are 1.08\*10<sup>23</sup> tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation (**Source: State Irrigation Department**)

**Conclusion:**

As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**16 PP to submit details of proposed plantation plan along with its location and requisite permission to be obtained from the Competent Authority.**

Plantation details are presented below:

<b>Location of greenbelt</b>	Both sides of approach road, On the riverbanks of both sides of the sand spot & nearby open areas. Haul Road outside riverbed.
<b>No. of plants to be planted</b>	708
<b>Spacing of plants</b>	4 m grid interval
<b>Species selected</b>	Native species

Tree species recommended for Plantation:

<b>Botanical name</b>	<b>Local name</b>	<b>Importance</b>
Azadirachta Indica	Neem	Neem oil & neem products

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**Environmental Management Plan**

Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

**17 BUDGET FOR CORPORATE ENVIRONMENT RESPONSIBILITY (CER)**

About 2% fund of the project cost is allocated for Corporate Environment Responsibility (CER) activities as presented in below Table:

SNo.	Budget Allocated	Budget (In INR)
1	Installation of one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	25000
3	Needed Repairing work with consultation of Grampanchayat	25000
4	Community Infrastructure Development(Steel fencing to ZP school with consultation of Grampanchayat)	120000
Total		2,50,000

**18 Environmental Management Plan (EMP)**

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR **217000** and recurring cost provision of about INR **329130** has been kept in the project cost towards the environmental protection, control and mitigation measures and implementation of the EMP, this cost is born by bidder / lease holder. The budgetary cost estimate for the EMP is given in Table.

**Table 6: Environmental Budget**

Dev Pimpri - Kumbhari Sim			EMP Budget		
SNo.	Component	Description	Capital cost Rs.	Recurring Cost Rs.	Total Cost in Rs
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	22850	22850



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**Environmental Management Plan**

3	Approach Road Maintenance		-	18280	18280
4	Green Belt Plantation	Along the River Bank	62500	-	62500
		Along the Approach Road	114500	-	114500
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	5000	-	5000
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	75000	75000
7	Security	Display Boards and other security measures	10000	-	10000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health check-up (1000Rs./ Employee)	-	63000	63000
9	Tarpaulin Cover (5000 INR per one Cover)		25000	-	25000
<b>Total</b>			<b>217000</b>	<b>329130</b>	<b>546130</b>

**19 Public Consultation Report**

Yawal					
S.No	Villager Name/Village,Taluka	Type of Person (Villager/Government Official)	Query raised by the Villager/Official	Response from the Proponent	Action Plan

**20 Summary and Conclusion**

The environmental status of the project site and study area of 10 km radius is delineated with respect to air, noise, water, land, biological and socio-economic environment the different project activities in the construction and operation phases are identified. To identify the impacts, the interaction between the project activities and different components of the environment are classified phase wise. A summary of the identified impacts is given in the following paragraphs.

During the operational phase, transportation of sand could cause a temporary disturbance to local environment which will be prevented with the proposed mitigation measures proposed in Point no. 4.

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***Environmental Management Plan***

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Proposed project will not have any major significant negative impacts. The minor impacts arising out during Excavation and Transportation phases can be mitigated with the help of the proposed Environmental Management Plan.

In general, Sand excavation from Dev Pimpri - Kumbhari Sim Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

### **PRE-FEASIBILITY REPORT**

The Dev Pimpri - Kumbhari Sim Sand Spot is situated at Village Dev Pimpri - Kumbhari Sim , Taluka Jamner, District- Jalgaon. Sand Spot is 2.5HA of area in Gut No. Dev Pimpri - 416, 420, 418, 415 & Kumbhari Sim - 34, 35, 26, 25, 12 & 13 of Jamner Tehsil, Jalgaon district. Detail of the project is summarised below

- District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- District Collector Jalgaon appointed M/s Integrated Precision Systems & Services Pvt. Ltd., for preparation of Mining Plan and grant of environmental clearance.
- Applicant proposed to auction the said Sand Spot over an area of 2.5HA area and identified for preparation of mining plan and for grant of Environmental Clearance.
- Mining Plans are prepared by Recognized Qualified Person and approved by Directorate of Geology & Mining Govt. of Maharashtra.
- About 7067 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Waghur river bank.

#### **1. Physiography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 260 to 264 from MSL i.e 4m. The Highest contour value is 264 and lower is 260. The flow direction of Waghur river is towards SW .

#### **2. Local Geology**

The local geology is Sand of various size up to depth of 2.5- 3meter.

### **3. Details of Exploration**

There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the river bed.

Mining - The mining will be continued with present method of open cast mining by cutting slice of 0.5m of Sand along topo-relief, by advancing from SW to NE direction as per allotted area by auction. The production can be at the rate of 20000 Cu.m or 7067 brass i.e. 1 year from the date of mining plan approval, the size of pit at the end will be 2.5HA.

### **Introduction of the project/ background information**

The Dev Pimpri - Kumbhari Sim Sand Spot has been kept for Auction which is situated at Village Dev Pimpri - Kumbhari Sim , Taluka Jamner , and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

#### **i) Brief description of project**

The Sand Spot has sufficient Reserve of Sand to work at 20000 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m area of Sand by advancing from North to South direction as per allotted Sand Spot area and handling of material with the help of labourer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

#### **ii) Need for the project**

The Sand or Sand Spot under reference is aimed at exploring Sand as ROM in various sizes i.e. fine to Coarse grain which is Transported to consumer site in outside Sand Spot area, for the infrastructure development i.e. Construction activity to produce Concrete for putting in the floor, roof- slabs, Column, Pillars, Bridges & Dam construction.

### **3. Project Description**

This mining project is an independent project and not an interlinked project.

#### **i) Location**

Dev Pimpri - Kumbhari Sim is a small Village in Jamner Taluka in Jalgaon District of Maharashtra State, India. It comes under Dev Pimpri - Kumbhari Sim Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 9 KM towards S from District headquarters Jalgaon. The Sand Ghat is 340 KM from State capital Mumbai.

Area covered in SOI Toposheet No- 46P/9

The boundary pillars of Sand Spot area are given below with GPS values.

<b>Boundary Points Dev Pimpri - Kumbhari Sim</b>	<b>Latitude</b>	<b>Longitude</b>
BP1	20°49'18.85"N	75°38'34.67"E
BP2	20°49'18.58"N	75°38'32.97"E
BP3	20°49'25.83"N	75°38'31.68"E
BP4	20°49'33.57"N	75°38'27.53"E
BP5	20°49'34.30"N	75°38'29.08"E
BP6	20°49'26.36"N	75°38'33.34"E

**ii) Alternate Sites**

No alternate site is proposed.

**iii) Magnitude of Operation**

Proposed period for mining of sand will be decided by the office of district collectorate 20000 cu.m. will be excavated during the period.

**iv) Project description-mining details**

The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 500m L X 50m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable. The Sand Spot has sufficient Reserve of Sand to work at 20000 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m slice of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**v) Raw material, marketing & transport of ore**

The proposed sand spot will be auctioned, and successful bidder will be responsible for carrying out mining operations as per environmental terms and conditions, approved mining method as per approved mining plan and other terms and conditions. The loading of Sand generated to the tractor/tipper/dumpers will be done by loaders & material transported to the Dealer site.

**vi) Resource optimization, recycle, reuse**

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

**vii) Water & energy requirement**

The major water requirement in the lease area is for dust suppression and for drinking use. The total water requirement is estimated as 3.2 KLD the required water for dust suppression can be arranged through tankers from nearby village and drinking water will be provided in earthen pots for labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

**viii) Quantity of waste & scheme for management**

There will not be any waste generation within the lease area.

**ix) Schematic Representations**

It is a proposal of opencast manual sand mining from river bed. Mining plan is approved by the competent authority.

**4. Site Analysis**

**i) Connectivity**

Dev Pimpri - Kumbhari Sim is a small Village in Jamner Taluka in Jalgaon District of Maharashtra State, India.

The sand spot area is connected to approach road at a distance of 457 m in South direction. Jalgaon Railway Station is present at a distance of 21 km.

**ii) Land Use, form & Ownership**

The ultimate land use pattern for the lease area of 2.5HA. will be consisting of

- |                                    |   |          |
|------------------------------------|---|----------|
| 1. Mining Area                     | : | 2.5HA.   |
| 2. Construction of Temporary Roads | : | 0.00 ha. |
| 3. Total                           | : | 2.5HA.   |

At present ownership of this sand spot area is in the hand of Govt. of Maharashtra, after approval of mining plan and EC quarry area will be transfer to bidder after auction.

**iii) Geology**

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

**Existing land use pattern**

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

**Social-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- A. The mining operations will provide direct & indirect employment village people.

- B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- C. Local work force will be given first preference for employment.
- D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area).

**Planning brief:**

**The proposed project is opencast manual sand mining activity.**

**Supply demand ratio:**

<b>Information required on demand and supply of district (2023-24)</b>			
<b>S.No.</b>	<b>Name of District</b>	<b>Total sand Demand of District in Brass</b>	<b>Total Sand Available of district in Brass</b>
1	Jalgaon	191380	104531

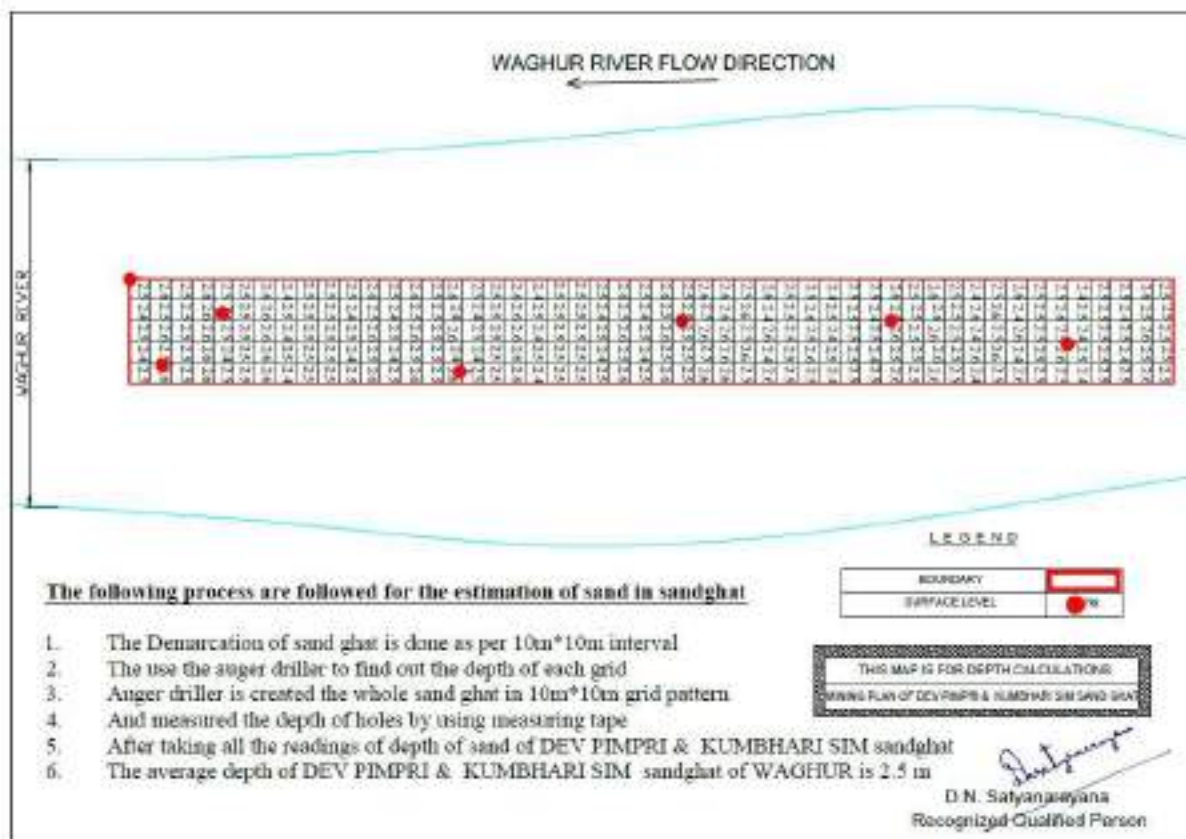
**Replenishment:**

- Area of deposition and erosion was calculated for each cross-section after giving due regard to stability & safety of active channel banks & other features of importance.
- DGPS and other survey tools have been used to define topography, contours and offsets of lease area.
- Contour & elevation benchmarks are provided with the baseline data for assessing pre and post-study period scenario.
- Physical benchmarks are fixed at intervals (1 in 30 m) & Reduced Levels (RL) are validated from a nearby standard RL.
- These RL are engraved on a steel plate (Bench Plate) & are fixed & placed at locations which are free from any damages & are available in pre and post-study period.
- Bench plates are available for use during the mining period as reference for all mining activity.
- Baseline data on elevation status for a grid of 10 m x 10 m is taken to ensure the accuracy in the assessment.
- It was made sure that two consecutive cross-sections in longitudinal and lateral direction is not be more than 10-meter distance apart.
- Changes have been observed in the elevation in pre and post scenario at each node and were depicted in graphical forms with an appropriate scale for estimating the area of deposition & erosion.
- Elevation level was placed in reference to the nearest bench-plates established for the purpose.
- The levels (MSL & RL) of corner point of each grid were identified and safety barriers (Non-Mining) are demarcated as restricted in consensus with Mineral Concession Rules

of respective State, and the provision mentioned in this Sustainable Sand Mining Management Guidelines.

- A clear identification was highlighted between grids under mineable and grids under the non-mineable area. These baseline data (pre and post) was subjected to stimulation with the help of data mine software to derive at the replenishment area and corresponding volume and estimated weight.
- The database was structured in a tabulated form clearly depicting the nomenclature of the section lines, latitude and longitude of the starting point, chain-age and respective levels of all the points taken on that section line.
- Net area was derived after summation of area of deposition minus area of erosion for each cross-section.
- Volume was estimated by multiplying distance between two cross-sections with average of net area of these two consecutive cross-sections.
- One sample per 900 square meters (30 m x 30 m) was preferred for sample density for assessment of bulk density for estimation of deposition rate.
- Care was taken that the sample for assessment of bulk density is taken from the deposition zone & not from erosion.

**Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.**





### **DANDY-BOLTON EQUATION**

**1. For Runoff Less Than 2 Inches**

$$S=1280*(Q)^{0.46}*(1.46-0.26\log(A)) *F$$

**2. For Runoff More Than 2 Inches**

$$S=1958*(Q)*(e^{-0.055*Q}) *(1.43-0.26\log(A))$$

Where

S=sediment yield of stream (t/yr./km<sup>2</sup>),

Q= average annual runoff (m<sup>3</sup>),

A= net drainage area in sq. mile

- The sediment yield of of Waghur river a tributary of Tapi river at Hatnur dam station are  $1.08*10^{23}$  tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation.

**(Source: State Irrigation Department)**

### **Conclusion:**

As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

### **Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020**

- District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- Appropriate feedback and its redressal mechanism shall also be made operational.
- Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- Printed on Indian Bank Association (IBA) Approved

- Magnetic Ink Character Recognition Code (MICR) paper
- Unique Barcode
- Unique Quick Response Code (QR)
- Fugitive Ink Background
- Invisible Ink Mark
- Void Pantograph
- Watermark
- CCTV at mine lease site
- GPS Based Vehicle Tracking System

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided outside Sand Spot area.

#### **Compliance of earlier Environmental Clearance**

- ❖ Dev Pimpri - Kumbhari Sim is a new mine. Hence there is no Earlier environmental compliance.

#### **7. Proposed Infrastructure**

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided in outside Sand Spot area.

#### **8. R&R Plan**

R&R is not involved.

#### **9. Project schedule**

Period of mining for the proposed sand spot will be decided by the Office of District Collectorate.

#### **10. Analysis of Proposal**

Description of the project included in items 1-10 above indicates the following:

1. It is proposed for opencast manual river sand mining.
2. Opencast mining without hampering the present environmental quality of the area.
3. Income to local people is uncertain & initiation of mining will ensure regular income to local people.

#### **11. Costing**

Costing parameters will be decided by the District Authorities.

#### **12. Compliance to Environment Clearance**

Whether there are any serious violation of safety rules and regulation which may jeopardize human health and safety. If so, give details of violations and state the steps proposed to be taken with the time scheduled to rectify the violations:

No, there are not any serious violation of safety rules and regulation, which may jeopardize human health and safety. The applicant has given a commitment in this effect and undertaking also given to follow and

implement, as specified in the mining plan. The applicant is undertake to abide and implement any special conditions imposed by various authorities and also to complete formalities under provision of the Mines & Mineral (Development & Regulation) Act, 1957 and the Bombay Minor Mineral rules, the Mineral Conservation and Development Rules, 1988 as amended, the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule 2013, MoEF&CC Notification S.O. 141 (E) dated 15th January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, Sustainable Sand Mining Management Guidelines 2019, Sand Mining Policy 2020

### **13. Any Other Information:**

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road -- 11) Railway -- 12) Tailing Pond -- 13) Effluent Treatment Plant - - 14) Mineral separation plant -- 15) Township Area -- 16) Others to specify -- 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule-2013, MoEF&CC Notification S.O. 141 (E) dated 15<sup>th</sup> January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.05.1994 and 04.09.2006.

**Risk Assessment for Dev Pimpri - Kumbhari Sim Sand Spot**

**1. Introduction**

A main principle of risk assessment is that it should take place before any changes are made. Risks should be assessed and control measures are put into action before new work is introduced or systems are changed. The process should influence budgets and allocation of resources, rather than being an afterthought when the decisions have already been made.

The risk management process is continuous, with well-defined steps that support better decision making by contributing greater insight into risks and their impacts. Risks from all sources are identified and once they pass the materiality threshold, a formal process begins in which causal factors and consequences are identified and the correlation with other risks and the current risk mitigating strategy is reviewed. One of the challenges is to ensure that mitigating strategies are geared to deliver reliable and timely risk information to support better decision-making.



The mining operations at DEV PIMPRI - KUMBHARI SIM SAND SPOT are subjected to the risks and hazards normally encountered in open-cast mining operations. These risks include operational risks relating to

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materials handling, accidents, removing material from quarry area. Mining processes also rely on key inputs, for example fuel. Appropriate insurance can provide protection from some, but not all, the costs that may arise from unforeseen events. If any of these risks should materialize, such an event could result in serious harm to employees and contractors, delays in production, increased production costs and possible increase in liabilities.

Disruption to the supply of key inputs, or changes in their pricing, may have a material and adverse impact on DEV PIMPRI - KUMBHARI SIM SAND SPOT asset values, costs, earnings and cash flows. Failure to meet production target results in increased unit costs. The impact is more pronounced at operations with a high level of fixed costs. Mitigation strategies include efforts to secure strategic supplies at competitive prices, energy reduction, and application of group water management guidelines, adoption of lean production principles and practices and business improvement initiatives to reduce unit costs.

There are certain aspects which should be taken care of, in a quarrying plan with accordance of risk management.

<b>Components</b>	<b>Risk Involved</b>
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
Fire	Only trucks and tractors will make use of diesel for transportation. Diesel is not so highly inflammable but accidental fires can take place.
Road Accidents	Vehicles are used for transporting the material from quarry area to the buyer's location. Due to some improper maintenance of the vehicle a road accident can occur leading to fatal results.

To minimize the risk, certain measures can be taken like implying safety rules, facilities of basic first aid near the site and having training for the workers about personal safety.

Disaster Management Plan is envisaged with a goal to prevent hazards and accidents at work places by careful design, operation, and maintenance of equipment's. All safety precautions and provisions of Metalliferous Mines Regulation-1961 will be strictly followed. Suitable control measures will be adopted to take care of hazards/disasters that may occur during mining operation.

- No mining activities during rainy days or just after heavy rain.
- Fire fighting, first aid provisions & safety appliances will be made available to the staff and their use regularly checked
- Regular maintenance of all haulage roads & mining machinery as per manufacturer's guidelines will be done

**APPENDIX VIII  
(See paragraph 6)  
FORM 1 M**

**APPLICATION FOR MINING OF MINOR MINERALS UNDER CATEGORY 'B2' FOR LESS THAN AND EQUAL TO FIVE HECTARE**

**(I) Basic Information**

(i) Name of the Mining Lease site: Dhavade Sand Spot

(ii) Location / site (GPS Co-ordinates):

<b>Boundary Points Dhavade</b>	<b>Latitude</b>	<b>Longitude</b>
BP1	21° 8'50.02"N	75°15'1.58"E
BP2	21° 8'49.32"N	75°14'52.94"E
BP3	21° 8'50.62"N	75°14'52.82"E
BP4	21° 8'51.32"N	75°15'1.46"E

(iii) Size of the Mining Lease (Hectare): 1HA

(vi) Capacity of Mining Lease (TPA): 3533Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 21.20 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, Maharashtra

**(II) Environmental Sensitivity**

<b>S. No.</b>	<b>Areas</b>	<b>Distance in Kilometer/Details</b>
1	Distance of project site from nearest rail or road bridge over the concerned River, Rivulet, Nallah etc.	Bridge 2Km, W
2	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road Any Other Road Electric transmission line pole or tower Canal or check dam or reservoirs or lake or ponds	Dharangaon Railway Station, 16Km, S NH-53, 22Km, SE SH-14, 2Km, W SH-185, 3.95Km, SW 0.6Km SW ET, 0.50Km, SE Girna Nadi, 6.84Km, W

*Dhavade sand spot over an extent of 1Ha At Tapi River Bed Gut No.247 & 260, Dhavade Village, Tehsil- Amalner, Jalgaon District, Maharashtra.*

Form 1M

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	In-take for drinking water pump house Intake for Irrigation canal pumps	Nil Nil
3	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil
4	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Water bodies: this is the case of river sand mining in Tapi River bed; RF, 9.7Km, SE
5	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil
6	Inland, coastal, marine or underground waters	Tapi River bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	NH6 3.3Km, E SH-4, 7.6 Km, N
9	Defense installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Dhavde, 384 m, SE
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	NES School, 1.80Km, SE Civil Hospital, 2.30Km, SE
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Tapi River Bed ( this is the case of river sand mining) RF, 9.7Km, SE
13	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil
14	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	The mine lease area falls in Seismic Zone III (Moderate), according to the Indian Standard Seismic Zoning Map.
15	Is proposed mining site located over or	No

***Dhavade sand spot over an extent of 1Ha At Tapi River Bed Gut No.247 & 260, Dhavade Village, Tehsil- Amalner, Jalgaon District, Maharashtra.***

**Form 1M**

**Page: 3 of 2**

	near fissure / fracture for ground water recharge	
16	Whether the proposal involves approval or clearance under the following Regulations or Acts, namely:- (a) The Forest (Conservation) Act, 1980; (b) The Wildlife (Protection) Act, 1972; (c) The Coastal Regulation Zone Notification, 2011. If yes, details of the same and their status to be given.	No
17	Forest land involved (hectares)	Nil
18	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Orders or directions of the Court, if any, and its relevance with the proposed project.	Nil



***Dhavade sand spot over an extent of 1Ha At Tapi River Bed Gut No.247 & 260, Dhavade Village, Tehsil- Amalner, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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## **ENVIRONMENTAL MANAGEMENT PLAN**

### **1 Introduction**

Ministry of Environment, Forest & Climate Change (MoEF&CC) Notification 2006 and Sustainable Sand Mining Management Guidelines 2016 and as per provision in Mines and Minerals (Development and Regulation) Act 1957 Schedule 60 section 15, Govt Of Maharashtra makes a Minor Mineral Extraction Rules 2013 to extract all the minor mineral in scientific way so that there is no adverse impact on Environment and Climate. To extract every minor mineral from any land (either Government or Private) there is provision of mining plan which is approved by competent authority; For long term leased minor mineral (5 – 10 years period) and Sand excavation from river bed, Senior Deputy Director of Directorate of Geology and Mining is a Competent authority, for short term Temporary permits which is valid for one year, Committee headed by Hon. Collector is Final authority to Approved the District Mining Plan.

As per Minor Mineral Extraction Rules 2013 Rules 70, Disposal of sand from River bed, Nallah and creeks by way of public auction, in this regards Govt resolution Gaukhni -10/0615/case No. 289/kha dated 3rd January 2018 is applicable in entire state. As per Enforcement & Monitoring Guidelines for Sand Mining 2020 Sustainable sand mining management guidelines 2016, Standard Environment condition for sand mining and sustainable mining practices, district level survey report should be prepared and area suitable for mining and area prohibited for mining be identified.

### **2 Project Description**

Dhavade is a small Village in Amalner Taluka in Jalgaon District of Maharashtra State, India. It comes under Dhavade Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 35KM towards SE from District headquarters Jalgaon. The Sand Ghat is 328KM from State capital Mumbai.

The sand spot area is connected to approach road at a distance of 555m in South direction. Jalgaon Railway Station is present at a distance of 10km.

Area covered in SOI Toposheet No 46P/4 and 46P/8.

The GPS reading of boundary point are given below:

**Dhavade sand spot over an extent of 1Ha At Tapi River Bed Gut No.247 & 260, Dhavade Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

**Table 1: Salient Features of the Project**

Items	Details															
Location	Village- Dhavade, Tehsil- Amalner District-Jalgaon, Maharashtra.															
Latitude and Longitude	<table border="1"> <thead> <tr> <th>Boundary Points Dhavade</th> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td>BP1</td> <td>21° 8'50.02"N</td> <td>75°15'1.58"E</td> </tr> <tr> <td>BP2</td> <td>21° 8'49.32"N</td> <td>75°14'52.94"E</td> </tr> <tr> <td>BP3</td> <td>21° 8'50.62"N</td> <td>75°14'52.82"E</td> </tr> <tr> <td>BP4</td> <td>21° 8'51.32"N</td> <td>75°15'1.46"E</td> </tr> </tbody> </table>	Boundary Points Dhavade	Latitude	Longitude	BP1	21° 8'50.02"N	75°15'1.58"E	BP2	21° 8'49.32"N	75°14'52.94"E	BP3	21° 8'50.62"N	75°14'52.82"E	BP4	21° 8'51.32"N	75°15'1.46"E
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BP3	21° 8'50.62"N	75°14'52.82"E														
BP4	21° 8'51.32"N	75°15'1.46"E														
Sand spot area (In Ha)	1															
Proposed production capacity (In Brass)	3533															
Manpower Requirement (considering 3-month period)	30 labours +1 mate + 1Supervisor=32manpower															
Infrastructure Requirement (As per Govt Resolution 3rd January 2018)	<ol style="list-style-type: none"> <li>1. Room / Hut for Official records</li> <li>2. Electricity / Battery for Running CCTV on 24X 7 daily.</li> <li>3. One Computer / Android base Mobile for the online generation of Invoice number.</li> </ol>															
Water requirement & source	8 KLD – Tankers from nearby village.															
Project cost INR (Lakh)	21.20 Lakhs															

***Dhavade sand spot over an extent of 1Ha At Tapi River Bed Gut No.247 & 260, Dhavade Village, Tehsil- Amalner, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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**3 Baseline Environmental Status**

**i. Topography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Amalner, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Amalner, Jalgaon, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Amalner, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 175 to 173 from MSL i.e 2m. The Highest contour value is 175 and lower is 173. The flow direction of TAPI river is towards SW

**ii. Hydrology**

The will be no change in water table during mining operation, as the depth of mining shall be restricted to 0.5m water level, which is less likely to affect surface level or ground water table. There is no

***Dhavade sand spot over an extent of 1Ha At Tapi River Bed Gut No.247 & 260, Dhavade Village, Tehsil- Amalner, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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proposal of any stream modification/diversion due to this mining activity hence there will be no impact on flow of water.

**iii. Soil Environment**

The area is not having any top soil or fertile soil. The depth of mining shall be restricted to 0.5m. There is no major impact on soil of the study area due to mining activities

**iv. Land Use Land Cover**

The project area does not consist of any forest land. It does not consist of any human habitations. Any change in scope of mining as per approved mining plan can lead to bank erosion /cutting and thereby river channel shifting degradation of land, causing loss of properties and degradation of surrounding landscape.

**v. Water Environment**

There will not be any waste water discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 0.5m only so there will not be any intersection with ground water table. It is observed from the dug well in the adjacent plain area and in the nearby villages that the ground water table varies depending upon seasonal variations. The depth to water levels in the district ranges from 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 0.5m that too within the river course and the total mining operation will be achieved through manual means, there will be no effect on ground water table. All the stipulations of MoEF for sand mining and guidelines as per the Maharashtra Minor Mineral Extraction [Development and Regulation] Rules, 2013 of Section 15 of MMDR Act 1957 [67 of 1957] will be followed. Hence, impact on water regime due to the proposed sand mining is not anticipated.

1. Precautionary measures will be initiated for closing the operation and shifting the men and transport vehicles prior to onset of monsoon.
2. No oils or lubricants will be discharged in the sand to avoid water pollution.

**vi. Climate**

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

**vii. Biological Environment**

The project is only of extraction of minor minerals viz. sand from the river quarry.

Flora: The area is completely barren and devoid of any vegetation in the river. Only few thorny bushes are seen on the banks of the River.

Fauna: As there is no forest cover, no wild life can be seen in this area.

1. There will be no significant impact of the river quarry mining project on the biological diversity found in the 5km. radius of the site.

***Dhavade sand spot over an extent of 1Ha At Tapi River Bed Gut No.247 & 260, Dhavade Village, Tehsil- Amalner, Jalgaon District, Maharashtra.***

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2. The mining lease area is in non-forest land i.e. sandy river quarry where presence of fauna is not at all seen. As such, there will be no adverse impact of the manual mining activity on fauna around the mining lease area.

3. No adverse impacts will be envisaged on the existing aquatic fauna, on downstream side (away from site) as the mining confined to above water level only and at all touching/disturbing water table.

**viii. Socio-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

A. The mining operations will provide direct & indirect employment village people.

B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.

C. Local work force will be given first preference for employment.

D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area)

**4 Impact assessment report along with proposed mitigation measures.**

Preparation of Environmental Management Plan is required for formulation, implementation, and monitoring of environmental protection measures during and after commissioning of projects. The plan should indicate the details as to how various measures have been proposed to be taken including cost components as may be required.

**1. Land Environment**

The type of mining and the characteristics of the mineral deposit both affect the degree to which mining disturbs the landscape. Sand Mining and allied activities will be done in the fluvial plain formed by river meandering. Mining of sand may cause a few environmental degradations.

**a. Anticipated Impacts:**

- ❖ Damage of riverbank due to access ramps to riverbed, may cause soil erosion.
- ❖ Destruction of river bank hinterland and ecological due to extraction of sand by probability of damage to the flood control bunds (built along the river side) due to heavy movements of vehicles over the bund to approach the mine area and further during transportation for sand from the mine area.
- ❖ Improper disposal of packing material, carried by the workers like used sachet/ gutka /pan masala pouches.
- ❖ Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations, borehole users due to dust, noise and it also causes traffic hazards.
- ❖ Surface degradation due to road network.

**b. Mitigation Measures:**

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- ❖ Safety distance of 3 meter or 1/10th of the width of the river whichever is more will be left from both the banks of the river (as per “Sustainable sand mining guidelines”).
- ❖ No foreign material like polythene bag, jute bag and useless articles should be allowed to remain/spill in river bed and catchment area, or no pits/pockets will be allowed to be filled with such material.
- ❖ Minimum number of access roads to river bed for which cutting of river banks will be avoided and ramps are to be maintained.
- ❖ Care will be taken to ensure that ponding is not formed in the river bed.
- ❖ Mining will not exceed beyond the allowed extraction capacity.
- ❖ Green belt will be developed along the haul road and the bank of rivers of mine premises and near the sand mining site. While selecting the plant species, preference will be given for planting native species of the area.

**3. Water Environment**

**a. Anticipated Impacts:**

- ❖ As the project activity is carried out in the dry part of river bed, none of the project activities will affect the water environment or riverbank habitats. Project activities will not have any adverse effect on the physical components of the environment and therefore may not have any effect on the recharge of ground waters or affect the water quality. Monitoring of water quality will be checked yearly.

**b. Mitigation Measures:**

- ❖ Mining is avoided during the monsoon season and at the time of floods. This will help in replenishment of sand in the riverbed.
- ❖ Mining below subterranean water level will be avoided as safeguard against environmental contamination and over exploitation of resources.
- ❖ River stream will not be diverted to form in active channels.
- ❖ Utmost care will be taken to minimize or control leakage vehicles to be used for sand transportation.
- ❖ The washing of tractor trolleys in the river will be avoided.
- ❖ The contractor will follow all guidelines and rules for proper and scientific method of mining during the period of extracting the sand.

**4. Air Environment:**

**a. Anticipated Impacts:**

**Due to Haul Road/ Access Road:**

- ❖ Plying of tractor trolleys from public road to river sand collection points needs access roads.
- ❖ Majority of such access roads are the same existing roads/tracks being used by pedestrians/cart owners. Movement of heavy vehicles sometimes causes problems to cattle, agriculture land, and human habitations due to dust, noise and movement of public.
- ❖ These environmental problems are felt more as the area is rural in nature.

***Dhavade sand spot over an extent of 1Ha At Tapi River Bed Gut No.247 & 260, Dhavade Village, Tehsil- Amalner, Jalgaon District, Maharashtra.***

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**Due to Mining process:**

- ❖ Air pollution is likely to be caused at various stages of sand mining operations such as excavation, loading & transportation of material.
- ❖ Most of the dust will be generated from loading & transportation. This dust becomes air borne and gets carried away to surrounding areas.
- ❖ The impact on air is mainly localized in nature as the dust particles are not carried to longer distances and the effect is felt within the core zone of the project involving active Sand mining operations.

**b. Mitigation Measures:**

**Mitigation of Impacts on Access Roads:**

- ❖ Movement of the vehicles on the road will be increased; however, unmetalled road in the mining area will be sprinkled with water at regular intervals.
- ❖ In addition to prevent spillage by tractor trolleys over loading should be controlled along with speed limit (1Brass /tractor trolley).
- ❖ Maintenance of haul road will be done on regular basis.

**c. For Fugitive Dust Emission:**

- ❖ To avoid fugitive dust emissions at the time of excavation, regular sprinkling of water will be done on regular basis.
- ❖ Sand is transported to the sites by road through tractor trolleys. The sand carrying vehicles shall be covered by tarpaulin sheets.
- ❖ The Green Belt development will be prepared along the haul roads, which will act as a pollution sink.
- ❖ To minimize the vehicular pollution from the sand transporting vehicles, the following conditions will insist to permit the vehicles of the transporters.
- ❖ The vehicles should be (Bharat-IV stage) compliant and should have pollution control certificate (PUC) issued by appropriate authorities.
- ❖ Regular maintenance of transport vehicles and monitoring of vehicular emission levels at periodical intervals.

**5. Noise:**

**a. Anticipated Impacts:**

Noise environment in this project will be affected only by the equipment at the site and vehicular transportation. Since slight increase in noise levels can be expected.

**b. Mitigation Measures:**

- ❖ Minimum use of Horns at the village area.
- ❖ Timely maintenance of vehicles and their silencers to minimize vibration and Sound.
- ❖ Phasing out of old and worn-out tractor trolleys.
- ❖ Provision of green belts along the road networks.
- ❖ Care will be taken to produce minimum sound during sand loading.
- ❖ Use of Backhoe and ear plugs may be provided to protect the labors working at the site.

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**6. Socio-Economic Environment**

This project operation will provide livelihood to the poorest section of the society.

**Anticipated Impacts and Evaluation:**

- ❖ The project activities shall not have any adverse impacts on any of the common property resources of the village communities, as the sand mine lease area is not being used for any purpose by any section of the society in this region.
- ❖ There is no R & R involvement in this project.
- ❖ There is no land acquisition in this project.
- ❖ The results of the field survey conducted to understand the knowledge and perception of the people living around the project area gives a clear idea about the need for the project.
- ❖ A major portion of the houses in the study area are semi- pucca type structures.
- ❖ The water source to these areas is from the municipal connection and private bore wells and wells. The awareness level regarding the proposed mining activity is very high. The proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes.

**a. Social and Demographic Profile:**

The workers are from local villages. These people have been provided all welfare from a lessee like medical benefits, insurance, fees for children's education etc. They have some land and cattle for their daily earnings. Additional income earned from the Sand Mining work will improve their living standard. The group of quarries in and around will help to have infrastructure facilities like roads, schools, shops etc. This will improve their social life.

**b. Occupational Health and Safety:**

This is Riverbed Sand Mine. So, the mining activities are comparatively less because the production is not on large scale. Workers do not come across any extreme condition like excessive heat, moisture etc. Workers working around it may come across this dusty environment, which can be managed by providing face mask.

**c. Human Settlement:**

There are no houses in and around lease area. All the due precautions will be taken during mining. Transport of finished products is through the villages. There will be psychological impact of the traffic on the local people. However, the intensity of traffic is less.

**d. Health and Hygiene:**

In general, the health of villagers is moderately good. In the rainy season, the atmospheric condition is unhygienic due to lack of proper drainage and sanitation in the village habitation. Villagers are working in agricultural fields and work as laborers.

**e. Education:**



***Dhavade sand spot over an extent of 1Ha At Tapi River Bed Gut No.247 & 260, Dhavade Village, Tehsil- Amalner, Jalgaon District, Maharashtra.***

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a. Mostly education is up to middle standard. Economic condition is in general moderate. So, after this project the standard of education will be increase.

**f. Socio Economic Benefits Arising Out of Mining:**

- a. Generation of employment in the rural area.
- b. Improvement in the living standards of the rural people.
- c. Creating of infrastructural facilities like roads, electricity, shops, school etc.
- d. Helping to improve literacy in the area Exploiting natural mineral so generation of revenue.
- e. Helping to sustain construction activity.
- f. Improving the greenery of the area, this is otherwise poor.

**g. Liquid Effluent:**

Not applicable because small mine and impacts are negligible.

**h. Solid Waste:**

Not applicable because small mine and impacts are negligible.

**6. Biological Environment**

**Anticipated Impacts:**

- ❖ **Aquatic environment-** Proposed mining of the dry bed of the river, so no possibility of disturbance of aquatic life.
- ❖ **Flora and Fauna-** The mining activity will have insignificant effect on the existing flora and fauna. The project area is surrounded with agricultural land. It was found that the sand mining activity will not have any significant impact on the biological environment of the region.

**Mitigation Measures:**

- ❖ Improvement in riverbank stability.
- ❖ Large woody debris in the riparian zone will be left undisturbed or replaced when moved and not be burnt.
- ❖ Vegetative debris will not be stored within the mine lease area.
- ❖ Operation and storage of heavy vehicles within riparian habitat will be restricted.
- ❖ Covering of loaded vehicles to reduce dust emission, which may harm surrounding agricultural crops and other plant species conservation of biological diversity of plants, birds, and animals.
- ❖ Greenbelt Development and Bio-Diversity Preservation Plantation activities will be carried out at the bank of the river and along the haul roads. This activity will help for maintaining ecology and environment of the area.

**5 Project Benefits**

The proposed expansion project will lead to the following benefits:

- Sand is available for Building and Construction work and by regular removal of sand there is no possibility of flood.
- This project will contribute additional revenue to the state Exchequer in the form of revenue.

**Dhavade sand spot over an extent of 1Ha At Tapi River Bed Gut No.247 & 260, Dhavade Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

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- The project will result in the employment opportunities to the unskilled/skilled local people. Thereby, the quality of life of the employed people will increase.

**6 Sand Ghat Closure Plan**

S. No	Head	Area put on. use at start of plan [in Ha]	Additional Requirement during Plan period [in Ha]	Total [in Ha]	Area considered as	Net consider for calculation
1	Area under mining / pit	-	1	1	1	1
2	Area under dump	NIL	---	---	---	---
3	Infrastructure Workshop Administrative Building etc.	--	--	--	--	--
4	Roads	--	--	--	--	--
5	Mineral reject	--	--	--	--	--
6	Green Belt Plantation /Soil dump	--	--	--	--	--
7	Tailing Dam /pond	--	--	--	--	--
8	Effluent Treatment Plant	--	--	--	--	--
9	Mineral storage	--	--	--	--	--
10	Township area	--	--	--	--	--
11	Other to specify	--	--	--	--	--
<b>GRAND TOTAL</b>			1	1	1	1

- ❖ Mining will be avoided during monsoon and floods; this will allow the sand deposit to replenish.
- ❖ Gabion structure will be constructed for the sand to replenish during monsoon season.

**7 Planning brief:**

The proposed project is opencast manual sand mining activity.

Supply demand ratio:

Information required on demand and supply of district (2023-24)			
S.No.	Name of District	Total sand Demand of District in Brass	Total Sand Available in district in Brass

**Dhavade sand spot over an extent of 1Ha At Tapi River Bed Gut No.247 & 260, Dhavade Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

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1	Jalgaon	191380	104531
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**8 Compliance of earlier Environmental Clearance**

- ❖ Dhavade sand spot of Dhavade village of Amalner tehsil has got environmental clearance in the year 2022-2023 but the sand ghat did not get a response in E-Tender and E-Auction Process, hence the Environmental Compliance was not done for the sand spot.

**9 Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020.**

- ❖ District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- ❖ Appropriate feedback and its redressal mechanism shall also be made operational.
- ❖ Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- ❖ Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- ❖ The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- ❖ Printed on Indian Bank Association (IBA) Approved
- ❖ Magnetic Ink Character Recognition Code (MICR) paper
- ❖ Unique Barcode
- ❖ Unique Quick Response Code (QR)
- ❖ Fugitive Ink Background
- ❖ Invisible Ink Mark
- ❖ Void Pantograph
- ❖ Watermark
- ❖ GPS BASED VEHICLE TRACKING SYSTEM
- ❖ CCTV Camera

**Cluster certificate with reference to the EIA Notification 2006 amended from time to time with specific remarks on the cluster formation in the periphery of the proposed sand ghat along with area map showing distances between adjoining sand mine areas.**

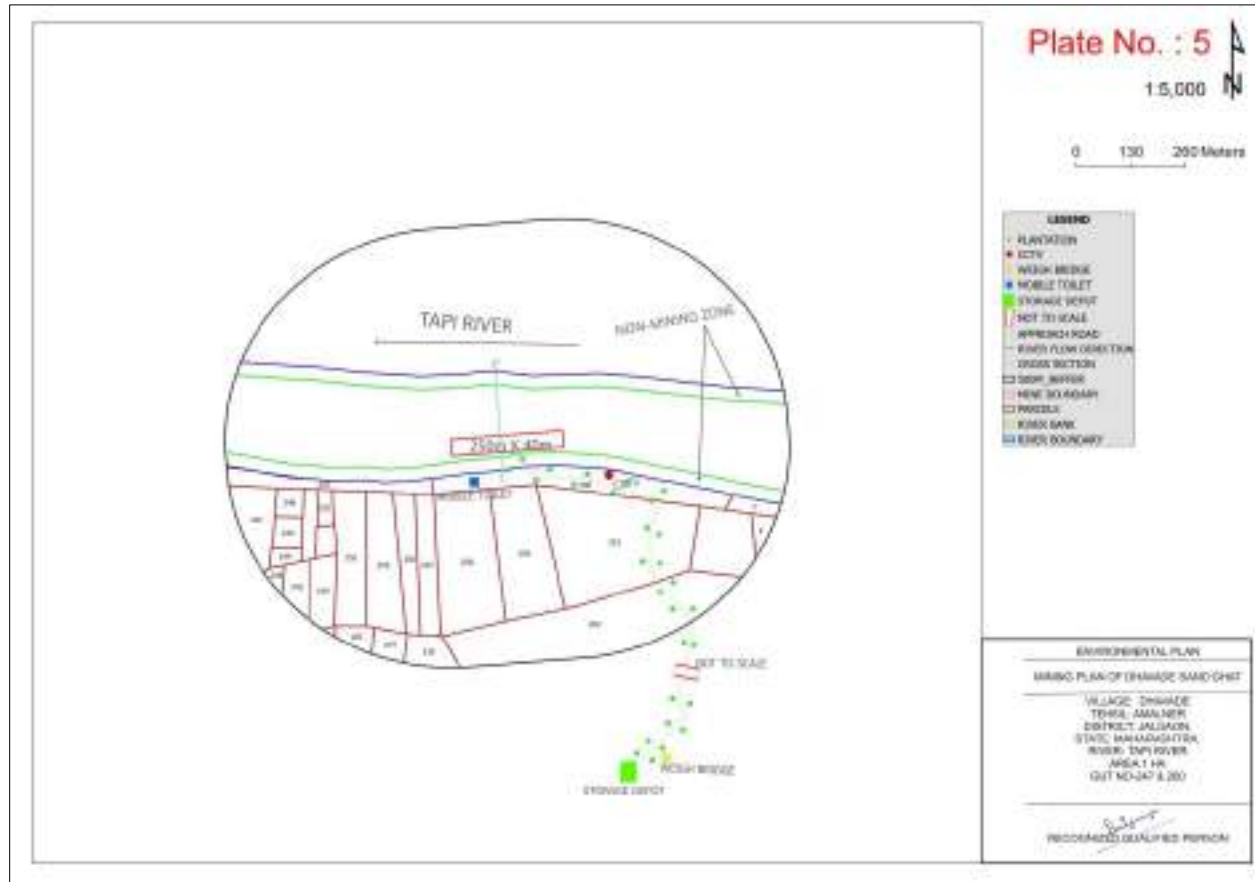
Dhavade does not form a cluster.

**Dhavade sand spot over an extent of 1Ha At Tapi River Bed Gut No.247 & 260, Dhavade Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

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**10 Layout of proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc.**

Proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc. layout is given below:



**11. Proposed approach road for transport of mined sand from sand ghat to the storage area and consent of storage area from the concerned landowners is an after-auction activity to use their land as approach road.**

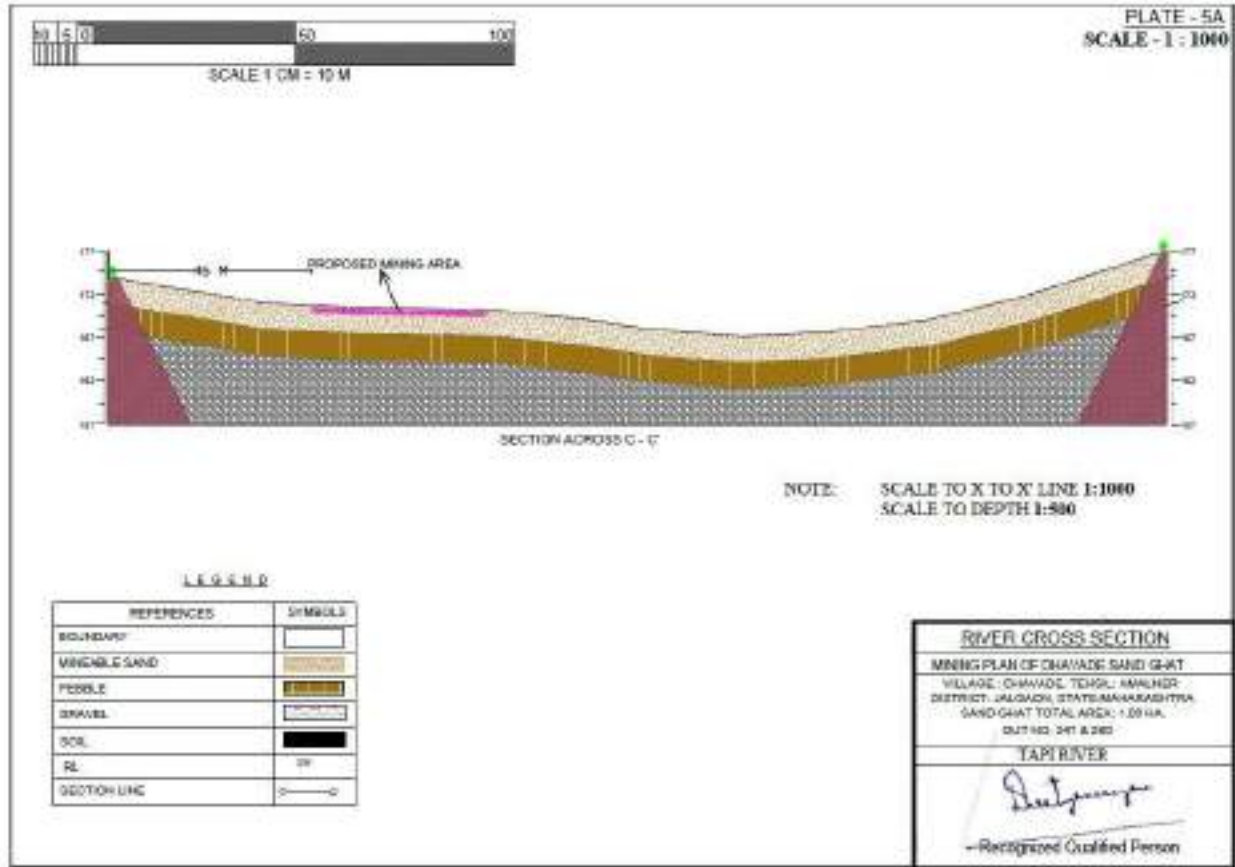
The proposed approach road length is at 631m and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the river bank. Consent of road submitted by Jalgaon Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from land owner.

**12. Cross -Section of riverbed showing distance of proposed sand mine area from the riverbank and other details as prescribed in the Enforcement & Monitoring Guidelines for sand mining published in January 2020 by MoEF&CC.**

Cross section of riverbed is shown below:

**Dhavade sand spot over an extent of 1Ha At Tapi River Bed Gut No.247 & 260, Dhavade Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

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**13. Details of District Level Task Force committee meetings and status of compliance of its recommendations if any.**

District Level Task Force Committee Meeting details is enclosed.

**14. Methodology for Sand Mining:**



**Dhavade sand spot over an extent of 1Ha At Tapi River Bed Gut No.247 & 260, Dhavade Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

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**Conclusion:**

As per above data sedimentation yield for Tapi River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**16 PP to submit details of proposed plantation plan along with its location and requisite permission to be obtained from the Competent Authority.**

Plantation details are presented below:

<b>Location of greenbelt</b>	Both sides of approach road, On the riverbanks of both sides of the sand spot & nearby open areas. Haul Road outside riverbed.
<b>No. of plants to be planted</b>	758
<b>Spacing of plants</b>	4 m grid interval
<b>Species selected</b>	Native species

Tree species recommended for Plantation:

<b>Botanical name</b>	<b>Local name</b>	<b>Importance</b>
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

**17 BUDGET FOR CORPORATE ENVIRONMENT RESPONSIBILITY (CER)**

About 2% fund of the project cost is allocated for Corporate Environment Responsibility (CER) activities as presented in below Table:

**Dhavade sand spot over an extent of 1Ha At Tapi River Bed Gut No.247 & 260, Dhavade Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

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SNo.	Budget Allocated	Budget (In INR)
1	Installation of one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	25000
3	Needed Repairing work with consultation of Grampanchayat	25000
4	Community Infrastructure Development(Steel fencing to ZP school with consultation of Grampanchayat)	70000
Total		2,00,000

**18 Environmental Management Plan (EMP)**

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR **224250** and recurring cost provision of about INR **327000** has been kept in the project cost towards the environmental protection, control and mitigation measures and implementation of the EMP, this cost is born by bidder / lease holder. The budgetary cost estimate for the EMP is given in Table.

**Table 6: Environmental Budget**

Dhavade			EMP Budget		
SNo.	Component	Description	Capital cost Rs.	Recurring Cost Rs.	Total Cost in Rs
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	55000	55000
3	Approach Road Maintenance		-	45000	45000
4	Green Belt Plantation	Along the River Bank	31250	-	31250
		Along the Approach Road	158000	-	158000
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	5000	-	5000
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	45000	45000
7	Security	Display Boards and other security measures	15000	-	15000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health	-	32000	32000



**Dhavade sand spot over an extent of 1Ha At Tapi River Bed Gut No.247 & 260, Dhavade Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

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		check-up (1000Rs./ Employee)			
9	Tarpaulin Cover (5000 INR per one Cover)		15000	-	15000
<b>Total</b>			<b>224250</b>	<b>327000</b>	<b>551250</b>

**19 Public Consultation Report**

Amalner					
S.No	Villager Name/Village,Taluka	Type of Person (Villager/Government Official)	Query raised by the Villager/Official	Response from the Proponent	Action Plan

**20 Summary and Conclusion**

The environmental status of the project site and study area of 10 km radius is delineated with respect to air, noise, water, land, biological and socio-economic environment the different project activities in the construction and operation phases are identified. To identify the impacts, the interaction between the project activities and different components of the environment are classified phase wise. A summary of the identified impacts is given in the following paragraphs.

During the operational phase, transportation of sand could cause a temporary disturbance to local environment which will be prevented with the proposed mitigation measures proposed in Point no. 4.

Proposed project will not have any major significant negative impacts. The minor impacts arising out during Excavation and Transportation phases can be mitigated with the help of the proposed Environmental Management Plan.

In general, Sand excavation from Dhavade Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

### **PRE-FEASIBILITY REPORT**

The Dhavade Sand Spot is situated at Village Dhavade , Taluka Alamner, District- Jalgaon. Sand Spot is 1Ha of area in Gut No 247 & 260 of Dhavade village of Amalner Tehsil, Jalgaon district. Detail of the project is summarised below

- District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- District Collector Jalgaon appointed M/s Integrated Precision Systems & Services Pvt. Ltd., for preparation of Mining Plan and grant of environmental clearance.
- Applicant proposed to auction the said Sand Spot over an area of 1Ha area and identified for preparation of mining plan and for grant of Environmental Clearance.
- Mining Plans are prepared by Recognized Qualified Person and approved by Directorate of Geology & Mining Govt. of Maharashtra.
- About 3533 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Tapi river bank.

#### **1. Physiography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 175 to 173 from MSL i.e 2m. The Highest contour value is 175 and lower is 173. The flow direction of TAPI river is towards SW

#### **2. Local Geology**

The local geology is Sand of various size up to depth of 2.5- 3meter.

#### **3. Details of Exploration**

**Dhavade sand spot over an extent of 1Ha At Tapi River Bed Gut No.247 & 260, Dhavade Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the river bed.

Mining - The mining will be continued with present method of open cast mining by cutting slice of 0.5m of Sand along topo-relief, by advancing from SW to NE direction as per allotted area by auction. The production can be at the rate of 10000 Cu.m or 3533 brass i.e. 1 year from the date of mining plan approval, the size of pit at the end will be 1Ha.

**Introduction of the project/ background information**

The Dhavade Sand Spot has been kept for Auction which is situated at Village Dhavade , Taluka Amalner , and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

**i) Brief description of project**

The Sand Spot has sufficient Reserve of Sand to work at 10000 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m area of Sand by advancing from North to South direction as per allotted Sand Spot area and handling of material with the help of labourer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**ii) Need for the project**

The Sand or Sand Spot under reference is aimed at exploring Sand as ROM in various sizes i.e. fine to Coarse grain which is Transported to consumer site in outside Sand Spot area, for the infrastructure development i.e. Construction activity to produce Concrete for putting in the floor, roof- slabs, Column, Pillars, Bridges & Dam construction.

**3. Project Description**

This mining project is an independent project and not an interlinked project.

**i) Location**

Dhavade is a small Village in Amalner Taluka in Jalgaon District of Maharashtra State, India. It comes under Dhavade Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 35KM towards SE from District headquarters Jalgaon. The Sand Ghat is 328KM from State capital Mumbai.

Area covered in SOI Toposheet No- 46P/4 and 46P/8.

The boundary pillars of Sand Spot area are given below with GPS values.

<b>Boundary Points Dhavade</b>	<b>Latitude</b>	<b>Longitude</b>
BP1	21° 8'50.02"N	75°15'1.58"E

**Dhavade sand spot over an extent of 1Ha At Tapi River Bed Gut No.247 & 260, Dhavade Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

BP2	21° 8'49.32"N	75°14'52.94"E
BP3	21° 8'50.62"N	75°14'52.82"E
BP4	21° 8'51.32"N	75°15'1.46"E

**ii) Alternate Sites**

No alternate site is proposed.

**iii) Magnitude of Operation**

Proposed period for mining of sand will be decided by the office of district collectorate 10000 cu.m. will be excavated during the period.

**iv) Project description-mining details**

The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 250m L X 40m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable. The Sand Spot has sufficient Reserve of Sand to work at 10000 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m slice of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**v) Raw material, marketing & transport of ore**

The proposed sand spot will be auctioned, and successful bidder will be responsible for carrying out mining operations as per environmental terms and conditions, approved mining method as per approved mining plan and other terms and conditions. The loading of Sand generated to the tractor/tipper/dumpers will be done by loaders & material transported to the Dealer site.

**vi) Resource optimization, recycle, reuse**

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

**vii) Water & energy requirement**

The major water requirement in the lease area is for dust suppression and for drinking use. The total water requirement is estimated as 8 KLD the required water for dust suppression can be arranged through tankers from nearby village and drinking water will be provided in earthen pots for labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

**viii) Quantity of waste & scheme for management**

There will not be any waste generation within the lease area.

**ix) Schematic Representations**

It is a proposal of opencast manual sand mining from river bed. Mining plan is approved by the competent authority.

**4. Site Analysis**

**i) Connectivity**

Dhavade is a small Village in Amalner Taluka in Jalgaon District of Maharashtra State, India.

The sand spot area is connected to approach road at a distance of 631m in South direction. Dharangaon Railway Station is present at a distance of 16km.

**ii) Land Use, form & Ownership**

The ultimate land use pattern for the lease area of 1Ha. will be consisting of

- |                                    |   |          |
|------------------------------------|---|----------|
| 1. Mining Area                     | : | 1Ha.     |
| 2. Construction of Temporary Roads | : | 0.00 ha. |
| 3. Total                           | : | 1Ha.     |

At present ownership of this sand spot area is in the hand of Govt. of Maharashtra, after approval of mining plan and EC quarry area will be transfer to bidder after auction.

**iii) Geology**

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

**Existing land use pattern**

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

**Social-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- A. The mining operations will provide direct & indirect employment village people.
- B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- C. Local work force will be given first preference for employment.
- D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area).

**Planning brief:**

**The proposed project is opencast manual sand mining activity.**

**Supply demand ratio:**

<b>Information required on demand and supply of district (2023-24)</b>			
<b>S.No.</b>	<b>Name of District</b>	<b>Total sand Demand of District in Brass</b>	<b>Total Sand Available of district in Brass</b>
1	Jalgaon	191380	104531

**Replenishment:**

- Area of deposition and erosion was calculated for each cross-section after giving due regard to stability & safety of active channel banks & other features of importance.
- DGPS and other survey tools have been used to define topography, contours and offsets of lease area.
- Contour & elevation benchmarks are provided with the baseline data for assessing pre and post-study period scenario.
- Physical benchmarks are fixed at intervals (1 in 30 m) & Reduced Levels (RL) are validated from a nearby standard RL.
- These RL are engraved on a steel plate (Bench Plate) & are fixed & placed at locations which are free from any damages & are available in pre and post-study period.
- Bench plates are available for use during the mining period as reference for all mining activity.
- Baseline data on elevation status for a grid of 10 m x 10 m is taken to ensure the accuracy in the assessment.
- It was made sure that two consecutive cross-sections in longitudinal and lateral direction is not be more than 10-meter distance apart.
- Changes have been observed in the elevation in pre and post scenario at each node and were depicted in graphical forms with an appropriate scale for estimating the area of deposition & erosion.
- Elevation level was placed in reference to the nearest bench-plates established for the purpose.
- The levels (MSL & RL) of corner point of each grid were identified and safety barriers (Non-Mining) are demarcated as restricted in consensus with Mineral Concession Rules of respective State, and the provision mentioned in this Sustainable Sand Mining Management Guidelines.
- A clear identification was highlighted between grids under mineable and grids under the non-mineable area. These baseline data (pre and post) was subjected to stimulation with the help of data mine software to derive at the replenishment area and corresponding volume and estimated weight.
- The database was structured in a tabulated form clearly depicting the nomenclature of the section lines, latitude and longitude of the starting point, chain-age and respective levels of all the points taken on that section line.



Q= average annual runoff (m3),

A= net drainage area in sq. mile

The sediment yield of Tapi river at Hatnur dam station are  $1.08 \times 10^23$  tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation.

**(Source: State Irrigation Department)**

**Conclusion:**

As per above data sedimentation yield for Tapi River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020**

- District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- Appropriate feedback and its redressal mechanism shall also be made operational.
- Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- Printed on Indian Bank Association (IBA) Approved
- Magnetic Ink Character Recognition Code (MICR) paper
- Unique Barcode
- Unique Quick Response Code (QR)
- Fugitive Ink Background
- Invisible Ink Mark
- Void Pantograph
- Watermark
- CCTV at mine lease site
- GPS Based Vehicle Tracking System



The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided outside Sand Spot area.

#### **Compliance of earlier Environmental Clearance**

- ❖ Dhavade sand spot of Dhavade village of Amalner tehsil has got environmental clearance in the year 2022-2023 but the sand ghat didn't get an response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot.

#### **7. Proposed Infrastructure**

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided in outside Sand Spot area.

#### **8. R&R Plan**

R&R is not involved.

#### **9. Project schedule**

Period of mining for the proposed sand spot will be decided by the Office of District Collectorate.

#### **10. Analysis of Proposal**

Description of the project included in items 1-10 above indicates the following:

1. It is proposed for opencast manual river sand mining.
2. Opencast mining without hampering the present environmental quality of the area.
3. Income to local people is uncertain & initiation of mining will ensure regular income to local people.

#### **11. Costing**

Costing parameters will be decided by the District Authorities.

#### **12. Compliance to Environment Clearance**

Whether there are any serious violation of safety rules and regulation which may jeopardize human health and safety. If so, give details of violations and state the steps proposed to be taken with the time scheduled to rectify the violations:

No, there are not any serious violation of safety rules and regulation, which may jeopardize human health and safety. The applicant has given a commitment in this effect and undertaking also given to follow and implement, as specified in the mining plan. The applicant is undertake to abide and implement any special conditions imposed by various authorities and also to complete formalities under provision of the Mines & Mineral (Development & Regulation) Act, 1957 and the Bombay Minor Mineral rules, the Mineral Conservation and Development Rules, 1988 as amended, the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule 2013, MoEF&CC Notification S.O. 141 (E) dated 15th January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, Sustainable Sand Mining Management Guidelines 2019, Sand Mining Policy 2020

**13. Any Other Information:**

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule-2013, MoEF&CC Notification S.O. 141 (E) dated 15<sup>th</sup> January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.05.1994 and 04.09.2006.

**Risk Assessment for Dhavade Sand Spot**

**1. Introduction**

A main principle of risk assessment is that it should take place before any changes are made. Risks should be assessed and control measures are put into action before new work is introduced or systems are changed. The process should influence budgets and allocation of resources, rather than being an afterthought when the decisions have already been made.

The risk management process is continuous, with well-defined steps that support better decision making by contributing greater insight into risks and their impacts. Risks from all sources are identified and once they pass the materiality threshold, a formal process begins in which causal factors and consequences are identified and the correlation with other risks and the current risk mitigating strategy is reviewed. One of the challenges is to ensure that mitigating strategies are geared to deliver reliable and timely risk information to support better decision-making.



The mining operations at DHAVADE SAND SPOT are subjected to the risks and hazards normally encountered in open-cast mining operations. These risks include operational risks relating to

---

materials handling, accidents, removing material from quarry area. Mining processes also rely on key inputs, for example fuel. Appropriate insurance can provide protection from some, but not all, the costs that may arise from unforeseen events. If any of these risks should materialize, such an event could result in serious harm to employees and contractors, delays in production, increased production costs and possible increase in liabilities.

Disruption to the supply of key inputs, or changes in their pricing, may have a material and adverse impact on DHAVADE SAND SPOT asset values, costs, earnings and cash flows. Failure to meet production target results in increased unit costs. The impact is more pronounced at operations with a high level of fixed costs. Mitigation strategies include efforts to secure strategic supplies at competitive prices, energy reduction, and application of group water management guidelines, adoption of lean production principles and practices and business improvement initiatives to reduce unit costs.

There are certain aspects which should be taken care of, in a quarrying plan with accordance of risk management.

<b>Components</b>	<b>Risk Involved</b>
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
Fire	Only trucks and tractors will make use of diesel for transportation. Diesel is not so highly inflammable but accidental fires can take place.
Road Accidents	Vehicles are used for transporting the material from quarry area to the buyer's location. Due to some improper maintenance of the vehicle a road accident can occur leading to fatal results.

To minimize the risk, certain measures can be taken like implying safety rules, facilities of basic first aid near the site and having training for the workers about personal safety.

Disaster Management Plan is envisaged with a goal to prevent hazards and accidents at work places by careful design, operation, and maintenance of equipment's. All safety precautions and provisions of Metalliferous Mines Regulation-1961 will be strictly followed. Suitable control measures will be adopted to take care of hazards/disasters that may occur during mining operation.

- No mining activities during rainy days or just after heavy rain.
  - Fire fighting, first aid provisions & safety appliances will be made available to the staff and their use regularly checked
  - Regular maintenance of all haulage roads & mining machinery as per manufacturer's guidelines will be done
-

**APPENDIX VIII  
(See paragraph 6)  
FORM 1 M**

**APPLICATION FOR MINING OF MINOR MINERALS UNDER CATEGORY 'B2' FOR LESS THAN AND EQUAL TO FIVE HECTARE**

**(I) Basic Information**

(i) Name of the Mining Lease site: Dodhe Sand Spot

(ii) Location / site (GPS Co-ordinates):

Boundary Points Dodhe	Latitude	Longitude
BP1	21°12'5.07"N	76° 8'7.21"E
BP2	21°12'6.46"N	76° 8'6.31"E
BP3	21°12'10.89"N	76° 8'14.06"E
BP4	21°12'17.00"N	76° 8'18.51"E
BP5	21°12'16.08"N	76° 8'19.94"E
BP6	21°12'9.69"N	76° 8'15.28"E

(iii) Size of the Mining Lease (Hectare): 2.5HA

(vi) Capacity of Mining Lease (TPA): 4416Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 26.50 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, Maharashtra

**(II) Environmental Sensitivity**

S. No.	Areas	Distance in Kilometer/Details
1	Distance of project site from nearest rail or road bridge over the concerned River, Rivulet, Nallah etc.	Bridge_6.4Km, SW
2	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road Any Other Road Electric transmission line pole or tower Canal or check dam or reservoirs or lake or	Bhusawal Railway station, 39 Km, SE NH6 3.3Km, E SH-4, 7.6 Km, N 0.6Km SW ET, 0.98Km, N Nil

***Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10 , 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.***

**Form 1M**

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	ponds In-take for drinking water pump house Intake for Irrigation canal pumps	Nil Nil
3	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil
4	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Water bodies: this is the case of river sand mining in Tapi River bed; Protected Forest, 9.28 Km, S
5	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil
6	Inland, coastal, marine or underground waters	Tapi River bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	NH6 3.3Km, E SH-4, 7.6 Km, N
9	Defense installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Dodhe, 587m, N
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	School 0.5Km, N Rural Hospital, Raver 10.3 Km, SW
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Tapi River Bed ( this is the case of river sand mining) Protected Forest, 9.28 Km, S
13	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil
14	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	The mine lease area falls in Seismic Zone III (Moderate), according to the Indian Standard Seismic Zoning Map.

***Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10 , 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.***

**Form 1M**

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15	Is proposed mining site located over or near fissure / fracture for ground water recharge	No
16	Whether the proposal involves approval or clearance under the following Regulations or Acts, namely:- (a) The Forest (Conservation) Act, 1980; (b) The Wildlife (Protection) Act, 1972; (c) The Coastal Regulation Zone Notification, 2011. If yes, details of the same and their status to be given.	No
17	Forest land involved (hectares)	Nil
18	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Orders or directions of the Court, if any, and its relevance with the proposed project.	Nil

***Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10 , 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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## **ENVIRONMENTAL MANAGEMENT PLAN**

### **1 Introduction**

Ministry of Environment, Forest & Climate Change (MoEF&CC) Notification 2006 and Sustainable Sand Mining Management Guidelines 2016 and as per provision in Mines and Minerals (Development and Regulation) Act 1957 Schedule 60 section 15, Govt Of Maharashtra makes a Minor Mineral Extraction Rules 2013 to extract all the minor mineral in scientific way so that there is no adverse impact on Environment and Climate. To extract every minor mineral from any land (either Government or Private) there is provision of mining plan which is approved by competent authority; For long term leased minor mineral (5 – 10 years period) and Sand excavation from river bed, Senior Deputy Director of Directorate of Geology and Mining is a Competent authority, for short term Temporary permits which is valid for one year, Committee headed by Hon. Collector is Final authority to Approved the District Mining Plan.

As per Minor Mineral Extraction Rules 2013 Rules 70, Disposal of sand from River bed, Nallah and creeks by way of public auction, in this regards Govt resolution Gaukhni -10/0615/case No. 289/kha dated 3rd January 2018 is applicable in entire state. As per Enforcement & Monitoring Guidelines for Sand Mining 2020 Sustainable sand mining management guidelines 2016, Standard Environment condition for sand mining and sustainable mining practices, district level survey report should be prepared and area suitable for mining and area prohibited for mining be identified.

### **2 Project Description**

Dodhe is a small Village in Raver Taluka in Jalgaon District of Maharashtra State, India. It comes under Dodhe Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 62KM towards SW from District headquarters Jalgaon. The Sand Ghat is 417KM from State capital Mumbai.

The sand spot area is connected to approach road at a distance of 325m in South direction. Jalgaon Railway Station is present at a distance of 65km.

Area covered in SOI Toposheet No F44Q/4.

The GPS reading of boundary point are given below:



***Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10 , 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

**Table 1: Salient Features of the Project**

Items	Details																					
Location	Village- Dodhe, Tehsil- Raver, District-Jalgaon, Maharashtra.																					
Latitude and Longitude	<table border="1"> <thead> <tr> <th>Boundary Points Dodhe</th> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td>BP1</td> <td>21°12'5.07"N</td> <td>76° 8'7.21"E</td> </tr> <tr> <td>BP2</td> <td>21°12'6.46"N</td> <td>76° 8'6.31"E</td> </tr> <tr> <td>BP3</td> <td>21°12'10.89"N</td> <td>76° 8'14.06"E</td> </tr> <tr> <td>BP4</td> <td>21°12'17.00"N</td> <td>76° 8'18.51"E</td> </tr> <tr> <td>BP5</td> <td>21°12'16.08"N</td> <td>76° 8'19.94"E</td> </tr> <tr> <td>BP6</td> <td>21°12'9.69"N</td> <td>76° 8'15.28"E</td> </tr> </tbody> </table>	Boundary Points Dodhe	Latitude	Longitude	BP1	21°12'5.07"N	76° 8'7.21"E	BP2	21°12'6.46"N	76° 8'6.31"E	BP3	21°12'10.89"N	76° 8'14.06"E	BP4	21°12'17.00"N	76° 8'18.51"E	BP5	21°12'16.08"N	76° 8'19.94"E	BP6	21°12'9.69"N	76° 8'15.28"E
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BP6	21°12'9.69"N	76° 8'15.28"E																				
Sand spot area (In Ha)	2.5																					
Proposed production capacity (In Brass)	4416																					
Manpower Requirement (considering 3-month period)	39 labours +1 mate + 1Supervisor=41manpower																					
Infrastructure Requirement (As per Govt Resolution 3rd January 2018)	1. Room / Hut for Official records 2. Electricity / Battery for Running CCTV on 24X 7 daily. 3. One Computer / Android base Mobile for the online generation of Invoice number.																					
Water requirement & source	6.6KLD – Tankers from nearby village.																					
Project cost INR (Lakh)	26.50 Lakhs																					

**3 Baseline Environmental Status**

**i. Topography**

***Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10 , 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Raver, Raver, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Raver, Jalgaon, Jalgaon, Bhusaval, Chalisgaon, Raver, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Raver, Raver, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 175 to 173 from MSL i.e 2m. The Highest contour value is 175 and lower is 173. The flow direction of TAPI river is towards SW

**ii. Hydrology**

The will be no change in water table during mining operation, as the depth of mining shall be restricted to 0.5m water level, which is less likely to affect surface level or ground water table. There is no proposal of any stream modification/diversion due to this mining activity hence there will be no impact on flow of water.

**iii. Soil Environment**

The area is not having any top soil or fertile soil. The depth of mining shall be restricted to 0.5m. There is no major impact on soil of the study area due to mining activities

***Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10 , 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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**iv. Land Use Land Cover**

The project area does not consist of any forest land. It does not consist of any human habitations. Any change in scope of mining as per approved mining plan can lead to bank erosion /cutting and thereby river channel shifting degradation of land, causing loss of properties and degradation of surrounding landscape.

**v. Water Environment**

There will not be any waste water discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 0.5m only so there will not be any intersection with ground water table. It is observed from the dug well in the adjacent plain area and in the nearby villages that the ground water table varies depending upon seasonal variations. The depth to water levels in the district ranges from 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 0.5m that too within the river course and the total mining operation will be achieved through manual means, there will be no effect on ground water table. All the stipulations of MoEF for sand mining and guidelines as per the Maharashtra Minor Mineral Extraction [Development and Regulation] Rules, 2013 of Section 15 of MMDR Act 1957 [67 of 1957] will be followed. Hence, impact on water regime due to the proposed sand mining is not anticipated.

1. Precautionary measures will be initiated for closing the operation and shifting the men and transport vehicles prior to onset of monsoon.
2. No oils or lubricants will be discharged in the sand to avoid water pollution.

**vi. Climate**

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

**vii. Biological Environment**

The project is only of extraction of minor minerals viz. sand from the river quarry.

Flora: The area is completely barren and devoid of any vegetation in the river. Only few thorny bushes are seen on the banks of the River.

Fauna: As there is no forest cover, no wild life can be seen in this area.

1. There will be no significant impact of the river quarry mining project on the biological diversity found in the 5km. radius of the site.
2. The mining lease area is in non-forest land i.e. sandy river quarry where presence of fauna is not at all seen. As such, there will be no adverse impact of the manual mining activity on fauna around the mining lease area.
3. No adverse impacts will be envisaged on the existing aquatic fauna, on downstream side (away from site) as the mining confined to above water level only and at all touching/disturbing water table.

***Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10 , 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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**viii. Socio-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- A. The mining operations will provide direct & indirect employment village people.
- B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- C. Local work force will be given first preference for employment.
- D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area)

**4 Impact assessment report along with proposed mitigation measures.**

Preparation of Environmental Management Plan is required for formulation, implementation, and monitoring of environmental protection measures during and after commissioning of projects. The plan should indicate the details as to how various measures have been proposed to be taken including cost components as may be required.

**1. Land Environment**

The type of mining and the characteristics of the mineral deposit both affect the degree to which mining disturbs the landscape. Sand Mining and allied activities will be done in the fluvial plain formed by river meandering. Mining of sand may cause a few environmental degradations.

**a. Anticipated Impacts:**

- ❖ Damage of riverbank due to access ramps to riverbed, may cause soil erosion.
- ❖ Destruction of river bank hinterland and ecological due to extraction of sand by probability of damage to the flood control bunds (built along the river side) due to heavy movements of vehicles over the bund to approach the mine area and further during transportation for sand from the mine area.
- ❖ Improper disposal of packing material, carried by the workers like used sachet/ gutka /pan masala pouches.
- ❖ Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations, borehole users due to dust, noise and it also causes traffic hazards.
- ❖ Surface degradation due to road network.

**b. Mitigation Measures:**

- ❖ Safety distance of 3 meter or 1/10th of the width of the river whichever is more will be left from both the banks of the river (as per "Sustainable sand mining guidelines").
- ❖ No foreign material like polythene bag, jute bag and useless articles should be allowed to remain/spill in river bed and catchment area, or no pits/pockets will be allowed to be filled with such material.

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***Environmental Management Plan***

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- ❖ Minimum number of access roads to river bed for which cutting of river banks will be avoided and ramps are to be maintained.
- ❖ Care will be taken to ensure that ponding is not formed in the river bed.
- ❖ Mining will not exceed beyond the allowed extraction capacity.
- ❖ Green belt will be developed along the haul road and the bank of rivers of mine premises and near the sand mining site. While selecting the plant species, preference will be given for planting native species of the area.

**3. Water Environment**

**a. Anticipated Impacts:**

- ❖ As the project activity is carried out in the dry part of river bed, none of the project activities will affect the water environment or riverbank habitats. Project activities will not have any adverse effect on the physical components of the environment and therefore may not have any effect on the recharge of ground waters or affect the water quality. Monitoring of water quality will be checked yearly.

**b. Mitigation Measures:**

- ❖ Mining is avoided during the monsoon season and at the time of floods. This will help in replenishment of sand in the riverbed.
- ❖ Mining below subterranean water level will be avoided as safeguard against environmental contamination and over exploitation of resources.
- ❖ River stream will not be diverted to form in active channels.
- ❖ Utmost care will be taken to minimize or control leakage vehicles to be used for sand transportation.
- ❖ The washing of tractor trolleys in the river will be avoided.
- ❖ The contractor will follow all guidelines and rules for proper and scientific method of mining during the period of extracting the sand.

**4. Air Environment:**

**a. Anticipated Impacts:**

**Due to Haul Road/ Access Road:**

- ❖ Plying of tractor trolleys from public road to river sand collection points needs access roads.
- ❖ Majority of such access roads are the same existing roads/tracks being used by pedestrians/cart owners. Movement of heavy vehicles sometimes causes problems to cattle, agriculture land, and human habitations due to dust, noise and movement of public.
- ❖ These environmental problems are felt more as the area is rural in nature.

**Due to Mining process:**

- ❖ Air pollution is likely to be caused at various stages of sand mining operations such as excavation, loading & transportation of material.
- ❖ Most of the dust will be generated from loading& transportation. This dust becomes air borne and gets carried away to surrounding areas.

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***Environmental Management Plan***

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- ❖ The impact on air is mainly localized in nature as the dust particles are not carried to longer distances and the effect is felt within the core zone of the project involving active Sand mining operations.

**b. Mitigation Measures:**

**Mitigation of Impacts on Access Roads:**

- ❖ Movement of the vehicles on the road will be increased; however, unmetalled road in the mining area will be sprinkled with water at regular intervals.
- ❖ In addition to prevent spillage by tractor trolleys over loading should be controlled along with speed limit (1Brass /tractor trolley).
- ❖ Maintenance of haul road will be done on regular basis.

**c. For Fugitive Dust Emission:**

- ❖ To avoid fugitive dust emissions at the time of excavation, regular sprinkling of water will be done on regular basis.
- ❖ Sand is transported to the sites by road through tractor trolleys. The sand carrying vehicles shall be covered by tarpaulin sheets.
- ❖ The Green Belt development will be prepared along the haul roads, which will act as a pollution sink.
- ❖ To minimize the vehicular pollution from the sand transporting vehicles, the following conditions will insist to permit the vehicles of the transporters.
- ❖ The vehicles should be (Bharat-IV stage) compliant and should have pollution control certificate (PUC) issued by appropriate authorities.
- ❖ Regular maintenance of transport vehicles and monitoring of vehicular emission levels at periodical intervals.

**5. Noise:**

**a. Anticipated Impacts:**

Noise environment in this project will be affected only by the equipment at the site and vehicular transportation. Since slight increase in noise levels can be expected.

**b. Mitigation Measures:**

- ❖ Minimum use of Horns at the village area.
- ❖ Timely maintenance of vehicles and their silencers to minimize vibration and Sound.
- ❖ Phasing out of old and worn-out tractor trolleys.
- ❖ Provision of green belts along the road networks.
- ❖ Care will be taken to produce minimum sound during sand loading.
- ❖ Use of Backhoe and ear plugs may be provided to protect the labors working at the site.

**6. Socio-Economic Environment**

This project operation will provide livelihood to the poorest section of the society.

**Anticipated Impacts and Evaluation:**

***Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10 , 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.***

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- ❖ The project activities shall not have any adverse impacts on any of the common property resources of the village communities, as the sand mine lease area is not being used for any purpose by any section of the society in this region.
- ❖ There is no R & R involvement in this project.
- ❖ There is no land acquisition in this project.
- ❖ The results of the field survey conducted to understand the knowledge and perception of the people living around the project area gives a clear idea about the need for the project.
- ❖ A major portion of the houses in the study area are semi- pucca type structures.
- ❖ The water source to these areas is from the municipal connection and private bore wells and wells. The awareness level regarding the proposed mining activity is very high. The proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes.

**a. Social and Demographic Profile:**

The workers are from local villages. These people have been provided all welfare from a lessee like medical benefits, insurance, fees for children's education etc. They have some land and cattle for their daily earnings. Additional income earned from the Sand Mining work will improve their living standard. The group of quarries in and around will help to have infrastructure facilities like roads, schools, shops etc. This will improve their social life.

**b. Occupational Health and Safety:**

This is Riverbed Sand Mine. So, the mining activities are comparatively less because the production is not on large scale. Workers do not come across any extreme condition like excessive heat, moisture etc. Workers working around it may come across this dusty environment, which can be managed by providing face mask.

**c. Human Settlement:**

There are no houses in and around lease area. All the due precautions will be taken during mining. Transport of finished products is through the villages. There will be psychological impact of the traffic on the local people. However, the intensity of traffic is less.

**d. Health and Hygiene:**

In general, the health of villagers is moderately good. In the rainy season, the atmospheric condition is unhygienic due to lack of proper drainage and sanitation in the village habitation. Villagers are working in agricultural fields and work as laborers.

**e. Education:**

- a. Mostly education is up to middle standard. Economic condition is in general moderate. So, after this project the standard of education will be increase.

**f. Socio Economic Benefits Arising Out of Mining:**

- a. Generation of employment in the rural area.
- b. Improvement in the living standards of the rural people.

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- c. Creating of infrastructural facilities like roads, electricity, shops, school etc.
- d. Helping to improve literacy in the area Exploiting natural mineral so generation of revenue.
- e. Helping to sustain construction activity.
- f. Improving the greenery of the area, this is otherwise poor.

**g. Liquid Effluent:**

Not applicable because small mine and impacts are negligible.

**h. Solid Waste:**

Not applicable because small mine and impacts are negligible.

**6. Biological Environment**

**Anticipated Impacts:**

- ❖ **Aquatic environment-** Proposed mining of the dry bed of the river, so no possibility of disturbance of aquatic life.
- ❖ **Flora and Fauna-** The mining activity will have insignificant effect on the existing flora and fauna. The project area is surrounded with agricultural land. It was found that the sand mining activity will not have any significant impact on the biological environment of the region.

**Mitigation Measures:**

- ❖ Improvement in riverbank stability.
- ❖ Large woody debris in the riparian zone will be left undisturbed or replaced when moved and not be burnt.
- ❖ Vegetative debris will not be stored within the mine lease area.
- ❖ Operation and storage of heavy vehicles within riparian habitat will be restricted.
- ❖ Covering of loaded vehicles to reduce dust emission, which may harm surrounding agricultural crops and other plant species conservation of biological diversity of plants, birds, and animals.
- ❖ Greenbelt Development and Bio-Diversity Preservation Plantation activities will be carried out at the bank of the river and along the haul roads. This activity will help for maintaining ecology and environment of the area.

**5 Project Benefits**

The proposed expansion project will lead to the following benefits:

- Sand is available for Building and Construction work and by regular removal of sand there is no possibility of flood.
- This project will contribute additional revenue to the state Exchequer in the form of revenue.
- The project will result in the employment opportunities to the unskilled/skilled local people.

Thereby, the quality of life of the employed people will increase.

**6 Sand Ghat Closure Plan**



**Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10 , 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.**

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S. No	Head	Area put on. use at start of plan [in Ha]	Additional Requirement during Plan period [in Ha]	Total [in Ha]	Area considered as	Net consider for calculation
1	Area under mining / pit	-	2.5	2.5	2.5	2.5
2	Area under dump	NIL	---	---	---	---
3	Infrastructure Workshop Administrative Building etc.	--	--	--	--	--
4	Roads	--	--	--	--	--
5	Mineral reject	--	--	--	--	--
6	Green Belt Plantation /Soil dump	--	--	--	--	--
7	Tailing Dam /pond	--	--	--	--	--
8	Effluent Treatment Plant	--	--	--	--	--
9	Mineral storage	--	--	--	--	--
10	Township area	--	--	--	--	--
11	Other to specify	--	--	--	--	--
<b>GRAND TOTAL</b>			2.5	2.5	2.5	2.5

- ❖ Mining will be avoided during monsoon and floods; this will allow the sand deposit to replenish.
- ❖ Gabion structure will be constructed for the sand to replenish during monsoon season.

**7 Planning brief:**

The proposed project is opencast manual sand mining activity.

Supply demand ratio:

Information required on demand and supply of district (2023-24)			
S.No.	Name of District	Total sand Demand of District in Brass	Total Sand Available in district in Brass
1	Jalgaon	191380	104531

**8 Compliance of earlier Environmental Clearance**

***Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10 , 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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- ❖ Dodhe sand spot of Dodhe village of Raver tehsil has got environmental clearance in the year 2021-2022 but the sand ghat didn't get an response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot.

**9 Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020.**

- ❖ District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- ❖ Appropriate feedback and its redressal mechanism shall also be made operational.
- ❖ Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- ❖ Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- ❖ The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- ❖ Printed on Indian Bank Association (IBA) Approved
- ❖ Magnetic Ink Character Recognition Code (MICR) paper
- ❖ Unique Barcode
- ❖ Unique Quick Response Code (QR)
- ❖ Fugitive Ink Background
- ❖ Invisible Ink Mark
- ❖ Void Pantograph
- ❖ Watermark
- ❖ GPS BASED VEHICLE TRACKING SYSTEM
- ❖ CCTV Camera

**Cluster certificate with reference to the EIA Notification 2006 amended from time to time with specific remarks on the cluster formation in the periphery of the proposed sand ghat along with area map showing distances between adjoining sand mine areas.**

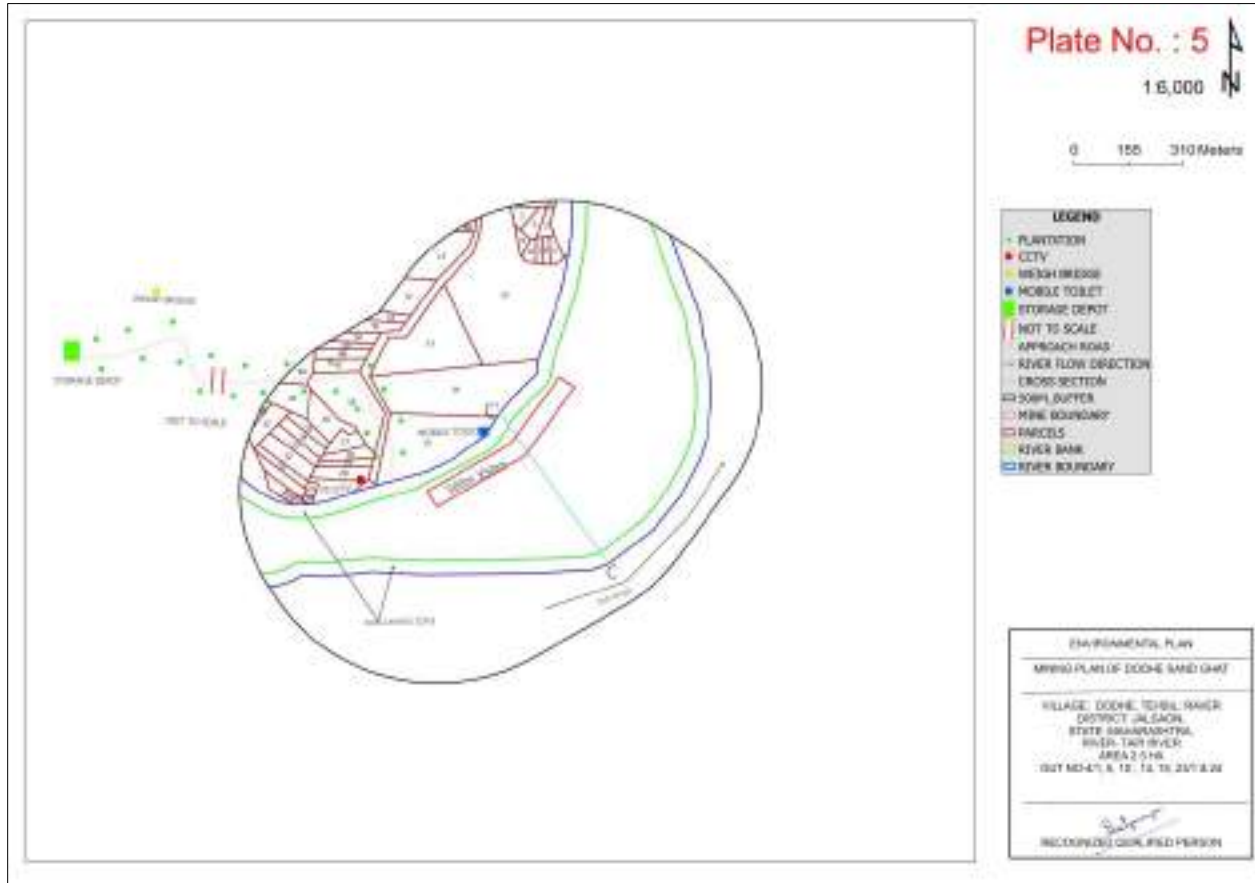
Dodhe does not form a cluster.

**10 Layout of proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc.**

Proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, Weigh Bridge, approach road etc. layout is given below:

**Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10 , 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.**

**Environmental Management Plan**



**11. Proposed approach road for transport of mined sand from sand ghat to the storage area and consent of storage area from the concerned landowners is an after-auction activity to use their land as approach road.**

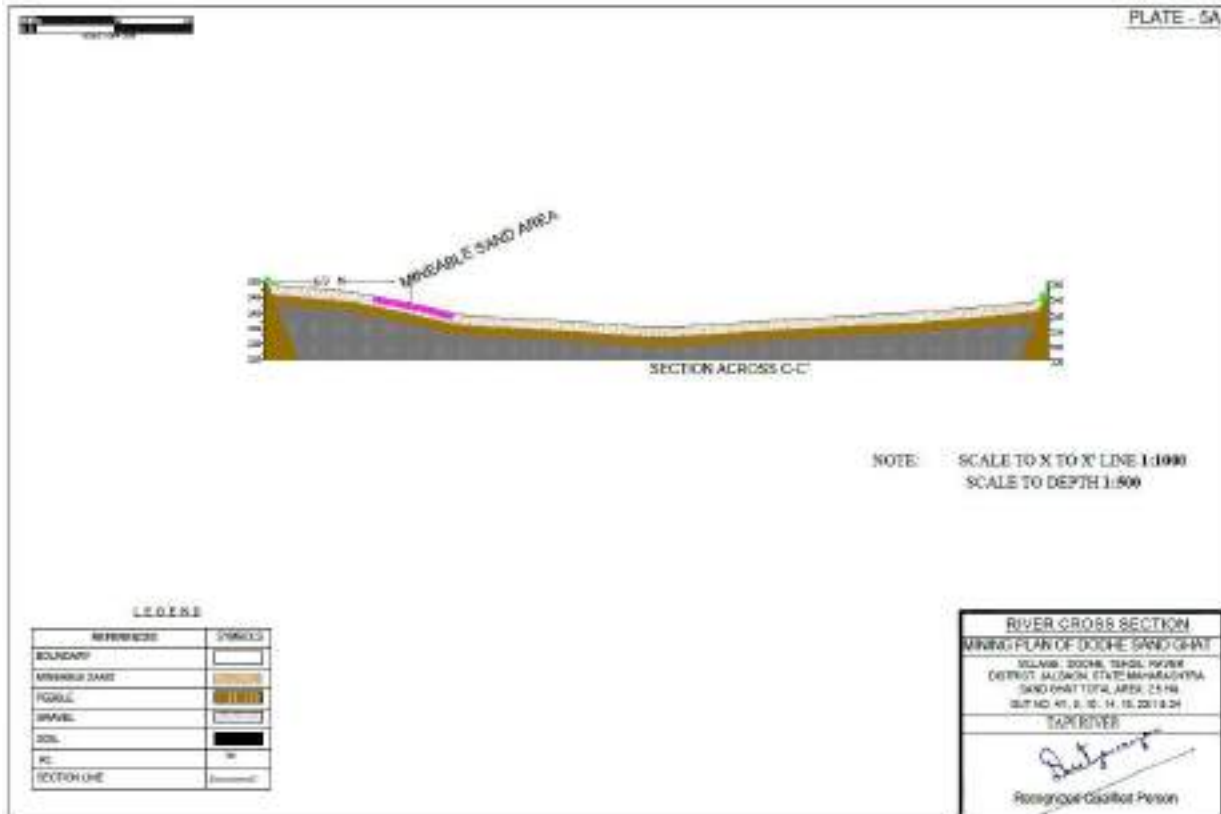
The proposed approach road length is at 325m and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the river bank. Consent of road submitted by Jalgaon Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from land owner.

**12. Cross -Section of riverbed showing distance of proposed sand mine area from the riverbank and other details as prescribed in the Enforcement & Monitoring Guidelines for sand mining published in January 2020 by MoEF&CC.**

Cross section of riverbed is shown below:

**Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10 , 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.**

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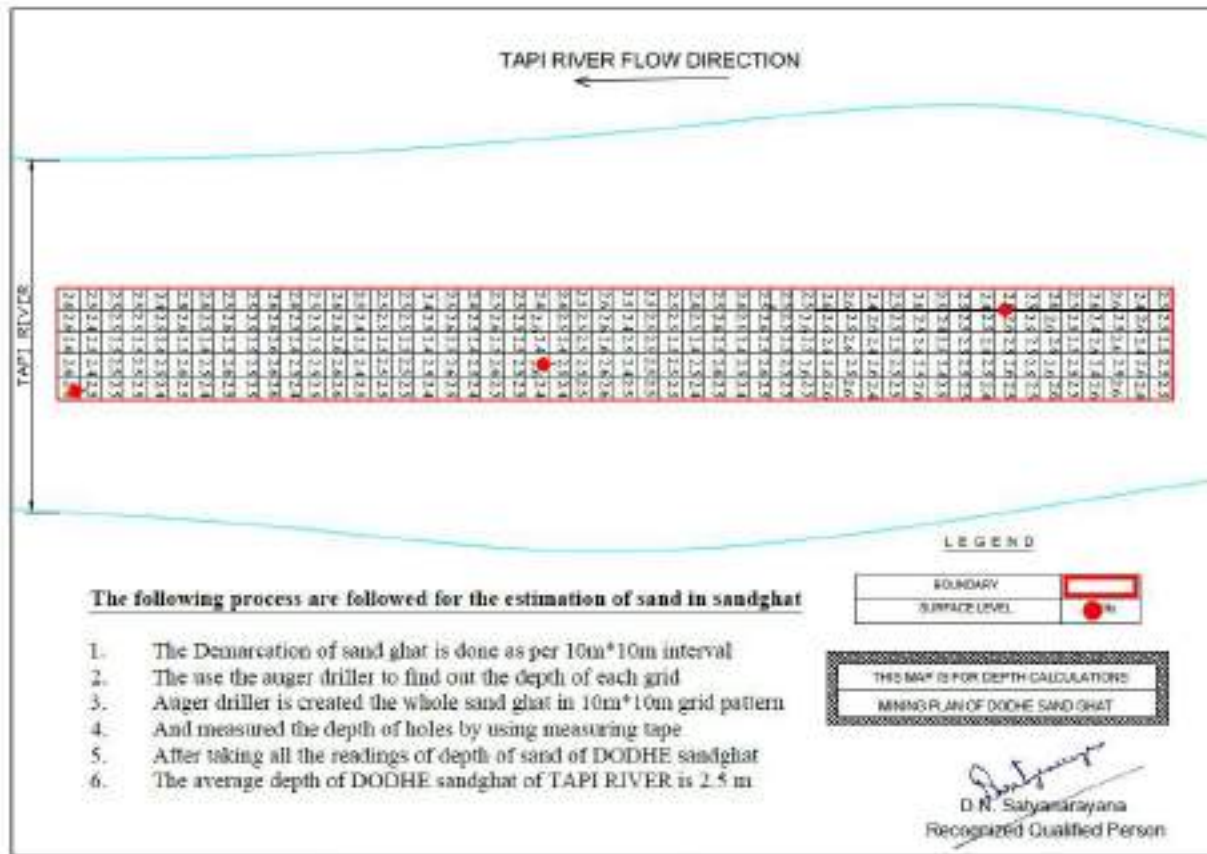


**13. Details of District Level Task Force committee meetings and status of compliance of its recommendations if any.**  
 District Level Task Force Committee Meeting details is enclosed.

**14. Methodology for Sand Mining:**

**Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10 , 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.**

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15. Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.

**DANDY-BOLTON EQUATION**

1. **For Runoff Less Than 2 Inches**

$$S = 1280 * (Q)^{0.46} * (16 - 0.26 \log(A)) * F$$

2. **For Runoff More Than 2 Inches**

$$S = 1958 * (Q)^{0.5} * (e^{-0.055 * Q}) * (13 - 0.26 \log(A))$$

Where

S= sediment yield of stream (t/yr./km<sup>2</sup>),

Q= average annual runoff (m<sup>3</sup>),

A= net drainage area in sq. Mile

The sediment yield of Tapi river at Hatnur dam station are 1.08\*10<sup>23</sup> tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation.

***Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10 , 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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**(Source: State Irrigation Department)**

**Conclusion:**

As per above data sedimentation yield for Tapi River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**16 PP to submit details of proposed plantation plan along with its location and requisite permission to be obtained from the Competent Authority.**

Plantation details are presented below:

<b>Location of greenbelt</b>	Both sides of approach road, On the riverbanks of both sides of the sand spot & nearby open areas. Haul Road outside riverbed.
<b>No. of plants to be planted</b>	576
<b>Spacing of plants</b>	4 m grid interval
<b>Species selected</b>	Native species

Tree species recommended for Plantation:

<b>Botanical name</b>	<b>Local name</b>	<b>Importance</b>
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

**17 BUDGET FOR CORPORATE ENVIRONMENT RESPONSIBILITY (CER)**

About 2% fund of the project cost is allocated for Corporate Environment Responsibility (CER) activities as presented in below Table:

**Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10 , 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.**

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SNo.	Budget Allocated	Budget (In INR)
1	Installation of one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	25000
3	Needed Repairing work with consultation of Grampanchayat	25000
4	Community Infrastructure Development(Steel fencing to ZP school with consultation of Grampanchayat)	120000
Total		250000

**18 Environmental Management Plan (EMP)**

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR **174000** and recurring cost provision of about INR **265250** has been kept in the project cost towards the environmental protection, control and mitigation measures and implementation of the EMP, this cost is born by bidder / lease holder. The budgetary cost estimate for the EMP is given in Table.

**Table 6: Environmental Budget**

Dodhe			EMP Budget		
SNo.	Component	Description	Capital cost Rs.	Recurring Cost Rs.	Total Cost in Rs
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	16250	16250
3	Approach Road Maintenance		-	13000	13000
4	Green Belt Plantation	Along the River Bank	62500	-	62500
		Along the Approach Road	81500	-	81500
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	5000	-	5000
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	45000	45000
7	Security	Display Boards and other security measures	5000	-	5000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health	-	41000	41000

**Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10 , 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.**

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		check-up (1000Rs./ Employee)			
9	Tarpaulin Cover (5000 INR per one Cover)		20000	-	20000
<b>Total</b>			<b>174000</b>	<b>265250</b>	<b>439250</b>

**19 Public Consultation Report**

Raver					
S.No	Villager Name/Village,Taluka	Type of Person (Villager/Government Official)	Query raised by the Villager/Official	Response from the Proponent	Action Plan

**20 Summary and Conclusion**

The environmental status of the project site and study area of 10 km radius is delineated with respect to air, noise, water, land, biological and socio-economic environment the different project activities in the construction and operation phases are identified. To identify the impacts, the interaction between the project activities and different components of the environment are classified phase wise. A summary of the identified impacts is given in the following paragraphs.

During the operational phase, transportation of sand could cause a temporary disturbance to local environment which will be prevented with the proposed mitigation measures proposed in Point no. 4.

Proposed project will not have any major significant negative impacts. The minor impacts arising out during Excavation and Transportation phases can be mitigated with the help of the proposed Environmental Management Plan.

In general, Sand excavation from Dodhe Sand Spot will be useful to the developmental work in the district and generate employment opportunities.



### **PRE-FEASIBILITY REPORT**

The Dodhe Sand Spot is situated at Village Dodhe, Taluka Raver, District- Jalgaon. Sand Spot is 2.5Ha of area in Gut No .4/1, 5, 10, 14, 15, 23/1 & 24, of Dodhe village of Raver Tehsil, Jalgaon district. Detail of the project is summarised below

- District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- District Collector Jalgaon appointed M/s Integrated Precision Systems & Services Pvt. Ltd., for preparation of Mining Plan and grant of environmental clearance.
- Applicant proposed to auction the said Sand Spot over an area of 2.5Ha area and identified for preparation of mining plan and for grant of Environmental Clearance.
- Mining Plans are prepared by Recognized Qualified Person and approved by Directorate of Geology & Mining Govt. of Maharashtra.
- About 4416 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Tapi river bank.

#### **1. Physiography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 236 to 240 from MSL i.e 2m. The Highest contour value is 240 and lower is 236. The flow direction of TAPI river is towards SW

#### **2. Local Geology**

The local geology is Sand of various size up to depth of 2.5- 3meter.

#### **3. Details of Exploration**

***Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10, 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.***

There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the river bed.

Mining - The mining will be continued with present method of open cast mining by cutting slice of 0.5m of Sand along topo-relief, by advancing from SW to NE direction as per allotted area by auction. The production can be at the rate of 12500 Cu.m or 4416 brass i.e. 1 year from the date of mining plan approval, the size of pit at the end will be 2.5Ha.

**Introduction of the project/ background information**

The Dodhe Sand Spot has been kept for Auction which is situated at Village Dodhe , Taluka Raver , and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

**i) Brief description of project**

The Sand Spot has sufficient Reserve of Sand to work at 12500 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m area of Sand by advancing from North to South direction as per allotted Sand Spot area and handling of material with the help of labourer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**ii) Need for the project**

The Sand or Sand Spot under reference is aimed at exploring Sand as ROM in various sizes i.e. fine to Coarse grain which is Transported to consumer site in outside Sand Spot area, for the infrastructure development i.e. Construction activity to produce Concrete for putting in the floor, roof- slabs, Column, Pillars, Bridges & Dam construction.

**3. Project Description**

This mining project is an independent project and not an interlinked project.

**i) Location**

Dodhe is a small Village in Raver Taluka in Jalgaon District of Maharashtra State, India. It comes under Dodhe Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 62KM towards SW from District headquarters Jalgaon. The Sand Ghat is 417KM from State capital Mumbai.

Area covered in SOI Toposheet No- F44Q/4

The boundary pillars of Sand Spot area are given below with GPS values.

<b>Boundary Points Dodhe</b>	<b>Latitude</b>	<b>Longitude</b>
BP1	21°12'5.07"N	76° 8'7.21"E
BP2	21°12'6.46"N	76° 8'6.31"E
BP3	21°12'10.89"N	76° 8'14.06"E
BP4	21°12'17.00"N	76° 8'18.51"E

**Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10, 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.**

BP5	21°12'16.08"N	76° 8'19.94"E
BP6	21°12'9.69"N	76° 8'15.28"E

**ii) Alternate Sites**

No alternate site is proposed.

**iii) Magnitude of Operation**

Proposed period for mining of sand will be decided by the office of district collectorate 12500 cu.m. will be excavated during the period.

**iv) Project description-mining details**

The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 500m L X 50m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable. The Sand Spot has sufficient Reserve of Sand to work at 12500 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m slice of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**v) Raw material, marketing & transport of ore**

The proposed sand spot will be auctioned, and successful bidder will be responsible for carrying out mining operations as per environmental terms and conditions, approved mining method as per approved mining plan and other terms and conditions. The loading of Sand generated to the tractor/tipper/dumpers will be done by loaders & material transported to the Dealer site.

**vi) Resource optimization, recycle, reuse**

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

**vii) Water & energy requirement**

The major water requirement in the lease area is for dust suppression and for drinking use. The total water requirement is estimated as 6.6 KLD the required water for dust suppression can be arranged through tankers from nearby village and drinking water will be provided in earthen pots for labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

**viii) Quantity of waste & scheme for management**

There will not be any waste generation within the lease area.

**ix) Schematic Representations**

It is a proposal of opencast manual sand mining from river bed. Mining plan is approved by the competent authority.

**4. Site Analysis**

**i) Connectivity**

Dodhe is a small Village in Raver Taluka in Jalgaon District of Maharashtra State, India.

The sand spot area is connected to approach road at a distance of 325m in South direction. Jalgaon Railway Station is present at a distance of 65km.

**ii) Land Use, form & Ownership**

The ultimate land use pattern for the lease area of 2.5Ha. will be consisting of

- |                                    |   |          |
|------------------------------------|---|----------|
| 1. Mining Area                     | : | 2.5Ha.   |
| 2. Construction of Temporary Roads | : | 0.00 ha. |
| 3. Total                           | : | 2.5Ha.   |

At present ownership of this sand spot area is in the hand of Govt. of Maharashtra, after approval of mining plan and EC quarry area will be transfer to bidder after auction.

**iii) Geology**

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

**Existing land use pattern**

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

**Social-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- A. The mining operations will provide direct & indirect employment village people.
- B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- C. Local work force will be given first preference for employment.
- D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area).

**Planning brief:**

**The proposed project is opencast manual sand mining activity.**

**Supply demand ratio:**

<b>Information required on demand and supply of district (2023-24)</b>
--

**Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10, 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.**

S.No.	Name of District	Total sand Demand of District in Brass	Total Sand Available of district in Brass
1	Jalgaon	191380	104531

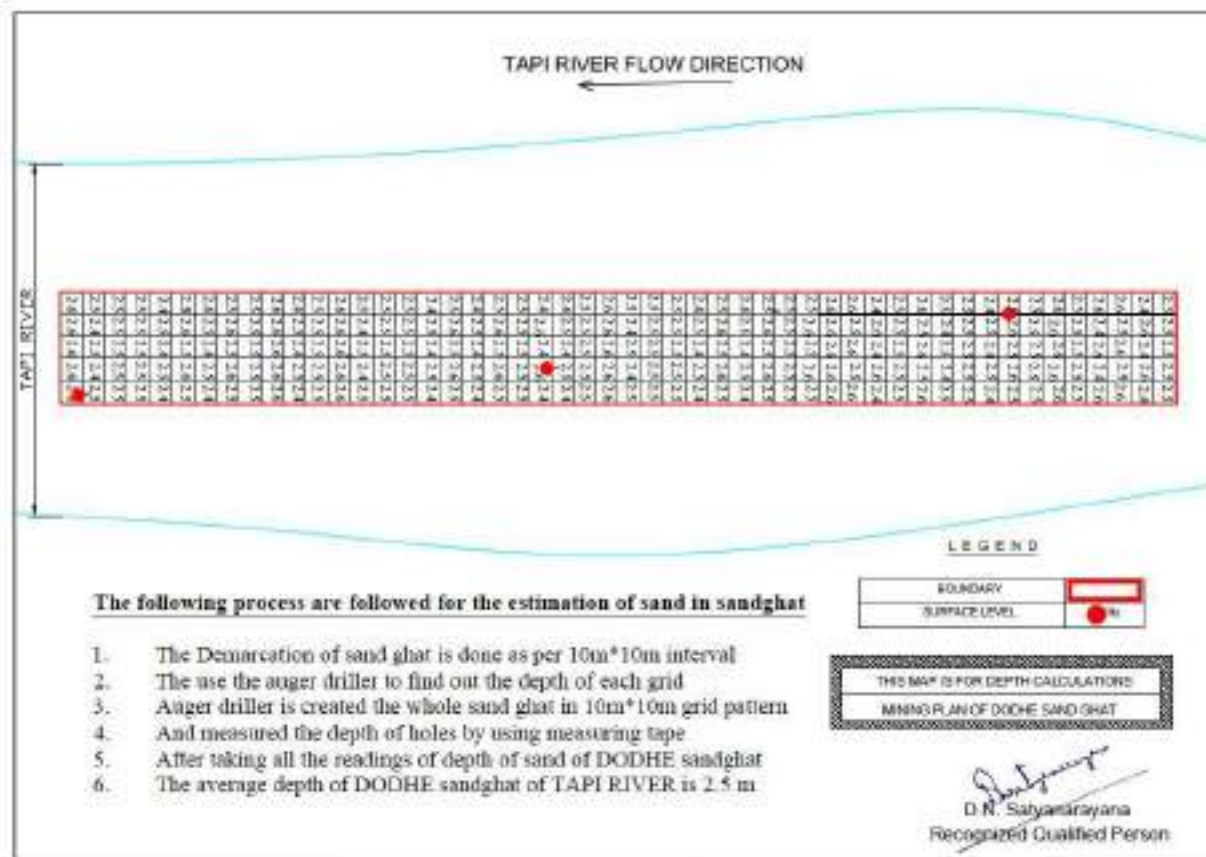
**Replenishment:**

- Area of deposition and erosion was calculated for each cross-section after giving due regard to stability & safety of active channel banks & other features of importance.
- DGPS and other survey tools have been used to define topography, contours and offsets of lease area.
- Contour & elevation benchmarks are provided with the baseline data for assessing pre and post-study period scenario.
- Physical benchmarks are fixed at intervals (1 in 30 m) & Reduced Levels (RL) are validated from a nearby standard RL.
- These RL are engraved on a steel plate (Bench Plate) & are fixed & placed at locations which are free from any damages & are available in pre and post-study period.
- Bench plates are available for use during the mining period as reference for all mining activity.
- Baseline data on elevation status for a grid of 10 m x 10 m is taken to ensure the accuracy in the assessment.
- It was made sure that two consecutive cross-sections in longitudinal and lateral direction is not be more than 10-meter distance apart.
- Changes have been observed in the elevation in pre and post scenario at each node and were depicted in graphical forms with an appropriate scale for estimating the area of deposition & erosion.
- Elevation level was placed in reference to the nearest bench-plates established for the purpose.
- The levels (MSL & RL) of corner point of each grid were identified and safety barriers (Non-Mining) are demarcated as restricted in consensus with Mineral Concession Rules of respective State, and the provision mentioned in this Sustainable Sand Mining Management Guidelines.
- A clear identification was highlighted between grids under mineable and grids under the non-mineable area. These baseline data (pre and post) was subjected to stimulation with the help of data mine software to derive at the replenishment area and corresponding volume and estimated weight.
- The database was structured in a tabulated form clearly depicting the nomenclature of the section lines, latitude and longitude of the starting point, chain-age and respective levels of all the points taken on that section line.
- Net area was derived after summation of area of deposition minus area of erosion for each cross-section.
- Volume was estimated by multiplying distance between two cross-sections with average of net area of these two consecutive cross-sections.

**Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10, 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.**

- One sample per 900 square meters (30 m x 30 m) was preferred for sample density for assessment of bulk density for estimation of deposition rate.
- Care was taken that the sample for assessment of bulk density is taken from the deposition zone & not from erosion.

Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.



**DANDY-BOLTON EQUATION**

1. **For Runoff Less Than 2 Inches**  
 $S = 1280 * (Q) * 0.46 * (1.46 - 0.26 \log(A)) * F$
2. **For Runoff More Than 2 Inches**  
 $S = 1958 * (Q) * (e^{-0.055 * Q}) * (1.43 - 0.26 \log(A))$

Where

- S= sediment yield of stream (t/yr./km<sup>2</sup>),
- Q= average annual runoff (m<sup>3</sup>),
- A= net drainage area in sq. mile

The sediment yield of Tapi river at Hatnur dam station are  $1.08 \times 10^3$  tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation.

**(Source: State Irrigation Department)**

**Conclusion:**

As per above data sedimentation yield for Tapi River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020**

- District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- Appropriate feedback and its redressal mechanism shall also be made operational.
- Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- Printed on Indian Bank Association (IBA) Approved
- Magnetic Ink Character Recognition Code (MICR) paper
- Unique Barcode
- Unique Quick Response Code (QR)
- Fugitive Ink Background
- Invisible Ink Mark
- Void Pantograph
- Watermark
- CCTV at mine lease site
- GPS Based Vehicle Tracking System

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided outside Sand Spot area.

**Compliance of earlier Environmental Clearance**

***Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10, 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.***

Dodhe sand spot of Dodhe village of Raver tehsil has got environmental clearance in the year 2021-2022 but the sand ghat didn't get a response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot.

**7. Proposed Infrastructure**

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided in outside Sand Spot area.

**8. R&R Plan**

R&R is not involved.

**9. Project schedule**

Period of mining for the proposed sand spot will be decided by the Office of District Collectorate.

**10. Analysis of Proposal**

Description of the project included in items 1-10 above indicates the following:

1. It is proposed for opencast manual river sand mining.
2. Opencast mining without hampering the present environmental quality of the area.
3. Income to local people is uncertain & initiation of mining will ensure regular income to local people.

**11. Costing**

Costing parameters will be decided by the District Authorities.

**12. Compliance to Environment Clearance**

Whether there are any serious violation of safety rules and regulation which may jeopardize human health and safety. If so, give details of violations and state the steps proposed to be taken with the time scheduled to rectify the violations:

No, there are not any serious violation of safety rules and regulation, which may jeopardize human health and safety. The applicant has given a commitment in this effect and undertaking also given to follow and implement, as specified in the mining plan. The applicant is undertake to abide and implement any special conditions imposed by various authorities and also to complete formalities under provision of the Mines & Mineral (Development & Regulation) Act, 1957 and the Bombay Minor Mineral rules, the Mineral Conservation and Development Rules, 1988 as amended, the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule 2013, MoEF&CC Notification S.O. 141 (E) dated 15th January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, Sustainable Sand Mining Management Guidelines 2019, Sand Mining Policy 2020

**13. Any Other Information:**

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.



***Dodhe sand spot over an extent of 2.5Ha At Tapi River Bed Gut No.4/1, 5, 10, 14, 15, 23/1 & 24, Dodhe Village, Tehsil- Raver, Jalgaon District, Maharashtra.***

These things will be religiously followed and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule-2013, MoEF&CC Notification S.O. 141 (E) dated 15<sup>th</sup> January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.05.1994 and 04.09.2006.

**Risk Assessment for Dodhe Sand Spot**

**1. Introduction**

A main principle of risk assessment is that it should take place before any changes are made. Risks should be assessed and control measures are put into action before new work is introduced or systems are changed. The process should influence budgets and allocation of resources, rather than being an afterthought when the decisions have already been made.

The risk management process is continuous, with well-defined steps that support better decision making by contributing greater insight into risks and their impacts. Risks from all sources are identified and once they pass the materiality threshold, a formal process begins in which causal factors and consequences are identified and the correlation with other risks and the current risk mitigating strategy is reviewed. One of the challenges is to ensure that mitigating strategies are geared to deliver reliable and timely risk information to support better decision-making.



The mining operations at DODHE SAND SPOT are subjected to the risks and hazards normally encountered in open-cast mining operations. These risks include operational risks relating to

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materials handling, accidents, removing material from quarry area. Mining processes also rely on key inputs, for example fuel. Appropriate insurance can provide protection from some, but not all, the costs that may arise from unforeseen events. If any of these risks should materialize, such an event could result in serious harm to employees and contractors, delays in production, increased production costs and possible increase in liabilities.

Disruption to the supply of key inputs, or changes in their pricing, may have a material and adverse impact on DODHE SAND SPOT asset values, costs, earnings and cash flows. Failure to meet production target results in increased unit costs. The impact is more pronounced at operations with a high level of fixed costs. Mitigation strategies include efforts to secure strategic supplies at competitive prices, energy reduction, and application of group water management guidelines, adoption of lean production principles and practices and business improvement initiatives to reduce unit costs.

There are certain aspects which should be taken care of, in a quarrying plan with accordance of risk management.

<b>Components</b>	<b>Risk Involved</b>
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
Fire	Only trucks and tractors will make use of diesel for transportation. Diesel is not so highly inflammable but accidental fires can take place.
Road Accidents	Vehicles are used for transporting the material from quarry area to the buyer's location. Due to some improper maintenance of the vehicle a road accident can occur leading to fatal results.

To minimize the risk, certain measures can be taken like implying safety rules, facilities of basic first aid near the site and having training for the workers about personal safety.

Disaster Management Plan is envisaged with a goal to prevent hazards and accidents at work places by careful design, operation, and maintenance of equipment's. All safety precautions and provisions of Metalliferous Mines Regulation-1961 will be strictly followed. Suitable control measures will be adopted to take care of hazards/disasters that may occur during mining operation.

- No mining activities during rainy days or just after heavy rain.
  - Fire fighting, first aid provisions & safety appliances will be made available to the staff and their use regularly checked
  - Regular maintenance of all haulage roads & mining machinery as per manufacturer's guidelines will be done
-

**APPENDIX VIII  
(See paragraph 6)**

**FORM 1 M**

**APPLICATION FOR MINING OF MINOR MINERALS UNDER CATEGORY 'B2' FOR LESS THAN AND EQUAL TO FIVE HECTARE**

**(I) Basic Information**

(i) Name of the Mining Lease site: Fupanagari Sand Spot

(ii) Location / site (GPS Co-ordinates):

<b>Boundary Points Fupanagari</b>	<b>Latitude</b>	<b>Longitude</b>
BP1	21° 4'35.03"N	75°29'30.16"E
BP2	21° 4'25.19"N	75°29'28.58"E
BP3	21° 4'25.58"N	75°29'25.84"E
BP4	21° 4'35.66"N	75°29'27.46"E
BP5	21° 4'44.89"N	75°29'30.61"E
BP6	21° 4'44.10"N	75°29'33.25"E

(iii) Size of the Mining Lease (Hectare): 4.84HA

(vi) Capacity of Mining Lease (TPA): 8551 Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 51.30 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, Maharashtra

**(II) Environmental Sensitivity**

<b>S. No.</b>	<b>Areas</b>	<b>Distance in Kilometer/Details</b>
1	Distance of project site from nearest rail or road bridge over the concerned River, Rivulet, Nallah etc.	Bridge on NH-53, 6.8Km,SE
2	Distance from infrastructural facilities Railway line	Jalgaon Railway station, 9.5 Km, S

***Fupanagari sand spot over an extent of 4.84Ha At Girna River Bed Gut No.66 & 67, Fupanagari Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra..***

**Form 1M**

**Page: 2 of 2**

	National Highway State Highway Major District Road Any Other Road Electric transmission line pole or tower Canal or check dam or reservoirs or lake or ponds In-take for drinking water pump house Intake for Irrigation canal pumps	NH6 6.5Km, SE SH53, 6.47Km, SE Kanalada Rd, 2.8Km, E 1.24Km, SW ET, 1.1Km, NW Nil Nil Nil
3	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil
4	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Water bodies: this is the case of river sand mining in Girna River bed; RF,8Km, SW
5	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil
6	Inland, coastal, marine or underground waters	Girna River bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	NH6 6.5Km, SE SH53, 6.47Km, SE
9	Defense installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Fupanagari 1.9Km, SE
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Marathi School 2.21Km, SE Varad Hospital, 8.2 Km, SE
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Girna River Bed ( this is the case of river sand mining) RF,8Km, SW
13	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil

14	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	The mine lease area falls in Seismic Zone III (Moderate), according to the Indian Standard Seismic Zoning Map.
15	Is proposed mining site located over or near fissure / fracture for ground water recharge	No
16	Whether the proposal involves approval or clearance under the following Regulations or Acts, namely:- (a) The Forest (Conservation) Act, 1980; (b) The Wildlife (Protection) Act, 1972; (c) The Coastal Regulation Zone Notification, 2011. If yes, details of the same and their status to be given.	No
17	Forest land involved (hectares)	Nil
18	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Orders or directions of the Court, if any, and its relevance with the proposed project.	Nil

***Fupanagari sand spot over an extent of 4.84Ha At Girna River Bed Gut No.66 & 67, Fupanagari Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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## **ENVIRONMENTAL MANAGEMENT PLAN**

### **1 Introduction**

Ministry of Environment, Forest & Climate Change (MoEF&CC) Notification 2006 and Sustainable Sand Mining Management Guidelines 2016 and as per provision in Mines and Minerals (Development and Regulation) Act 1957 Schedule 60 section 15, Govt Of Maharashtra makes a Minor Mineral Extraction Rules 2013 to extract all the minor mineral in scientific way so that there is no adverse impact on Environment and Climate. To extract every minor mineral from any land (either Government or Private) there is provision of mining plan which is approved by competent authority; For long term leased minor mineral (5 – 10 years period) and Sand excavation from river bed, Senior Deputy Director of Directorate of Geology and Mining is a Competent authority, for short term Temporary permits which is valid for one year, Committee headed by Hon. Collector is Final authority to Approved the District Mining Plan.

As per Minor Mineral Extraction Rules 2013 Rules 70, Disposal of sand from River bed, Nallah and creeks by way of public auction, in this regards Govt resolution Gaukhni -10/0615/case No. 289/kha dated 3rd January 2018 is applicable in entire state. As per Enforcement & Monitoring Guidelines for Sand Mining 2020 Sustainable sand mining management guidelines 2016, Standard Environment condition for sand mining and sustainable mining practices, district level survey report should be prepared and area suitable for mining and area prohibited for mining be identified.

### **2 Project Description**

Fupanagari is a small Village in Jalgaon Taluka in Jalgaon District of Maharashtra State, India. It comes under Fupanagari Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 9.9KM towards N from District headquarters Jalgaon. The Sand Ghat is 348KM from State capital Mumbai.

The sand spot area is connected to approach road at a distance of 722m in South direction. Jalgaon Railway Station is present at a distance of 10km.

Area covered in SOI Toposheet No- 46P/8. The GPS reading of boundary point are given below:

**Fupanagari sand spot over an extent of 4.84Ha At Girna River Bed Gut No.66 & 67, Fupanagari Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

**Table 1: Salient Features of the Project**

Items	Details																					
Location	Village- Fupanagari, Tehsil- Jalgaon District-Jalgaon, Maharashtra.																					
Latitude and Longitude	<table border="1"> <thead> <tr> <th>Boundary Points Fupanagari</th> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td>BP1</td> <td>21° 4'35.03"N</td> <td>75°29'30.16"E</td> </tr> <tr> <td>BP2</td> <td>21° 4'25.19"N</td> <td>75°29'28.58"E</td> </tr> <tr> <td>BP3</td> <td>21° 4'25.58"N</td> <td>75°29'25.84"E</td> </tr> <tr> <td>BP4</td> <td>21° 4'35.66"N</td> <td>75°29'27.46"E</td> </tr> <tr> <td>BP5</td> <td>21° 4'44.89"N</td> <td>75°29'30.61"E</td> </tr> <tr> <td>BP6</td> <td>21° 4'44.10"N</td> <td>75°29'33.25"E</td> </tr> </tbody> </table>	Boundary Points Fupanagari	Latitude	Longitude	BP1	21° 4'35.03"N	75°29'30.16"E	BP2	21° 4'25.19"N	75°29'28.58"E	BP3	21° 4'25.58"N	75°29'25.84"E	BP4	21° 4'35.66"N	75°29'27.46"E	BP5	21° 4'44.89"N	75°29'30.61"E	BP6	21° 4'44.10"N	75°29'33.25"E
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BP6	21° 4'44.10"N	75°29'33.25"E																				
Sand spot area (In Ha)	4.84																					
Proposed production capacity (In Brass)	8551																					
Manpower Requirement (considering 3-month period)	70 labours +3 mate + 3Supervisor=76 manpower																					
Infrastructure Requirement (As per Govt Resolution 3rd January 2018)	1. Room / Hut for Official records 2. Electricity / Battery for Running CCTV on 24X 7 daily. 3. One Computer / Android base Mobile for the online generation of Invoice number.																					
Water requirement & source	5.4 KLD – Tankers from nearby village.																					
Project cost INR (Lakh)	51.30 Lakhs																					



***Fupanagari sand spot over an extent of 4.84Ha At Girna River Bed Gut No.66 & 67, Fupanagari Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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**3 Baseline Environmental Status**

**i. Topography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Amalner, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Amalner, Jalgaon, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Amalner, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 189 to 192 from MSL i.e 3m. The Highest contour value is 192 and lower is 189. The flow direction of GIRNA river is towards SW

**ii. Hydrology**

The will be no change in water table during mining operation, as the depth of mining shall be restricted to 0.5m water level, which is less likely to affect surface level or ground water table. There is no proposal of any stream modification/diversion due to this mining activity hence there will be no impact on flow of water.

***Fupanagari sand spot over an extent of 4.84Ha At Girna River Bed Gut No.66 & 67, Fupanagari Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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**iii. Soil Environment**

The area is not having any top soil or fertile soil. The depth of mining shall be restricted to 0.5m. There is no major impact on soil of the study area due to mining activities

**iv. Land Use Land Cover**

The project area does not consist of any forest land. It does not consist of any human habitations. Any change in scope of mining as per approved mining plan can lead to bank erosion /cutting and thereby river channel shifting degradation of land, causing loss of properties and degradation of surrounding landscape.

**v. Water Environment**

There will not be any waste water discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 0.5m only so there will not be any intersection with ground water table. It is observed from the dug well in the adjacent plain area and in the nearby villages that the ground water table varies depending upon seasonal variations. The depth to water levels in the district ranges from 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 0.5m that too within the river course and the total mining operation will be achieved through manual means, there will be no effect on ground water table. All the stipulations of MoEF for sand mining and guidelines as per the Maharashtra Minor Mineral Extraction [Development and Regulation] Rules, 2013 of Section 15 of MMDR Act 1957 [67 of 1957] will be followed. Hence, impact on water regime due to the proposed sand mining is not anticipated.

1. Precautionary measures will be initiated for closing the operation and shifting the men and transport vehicles prior to onset of monsoon.
2. No oils or lubricants will be discharged in the sand to avoid water pollution.

**vi. Climate**

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

**vii. Biological Environment**

The project is only of extraction of minor minerals viz. sand from the river quarry.

Flora: The area is completely barren and devoid of any vegetation in the river. Only few thorny bushes are seen on the banks of the River.

Fauna: As there is no forest cover, no wild life can be seen in this area.

1. There will be no significant impact of the river quarry mining project on the biological diversity found in the 5km. radius of the site.

***Fupanagari sand spot over an extent of 4.84Ha At Girna River Bed Gut No.66 & 67, Fupanagari Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.***

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2. The mining lease area is in non-forest land i.e. sandy river quarry where presence of fauna is not at all seen. As such, there will be no adverse impact of the manual mining activity on fauna around the mining lease area.

3. No adverse impacts will be envisaged on the existing aquatic fauna, on downstream side (away from site) as the mining confined to above water level only and at all touching/disturbing water table.

**viii. Socio-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

A. The mining operations will provide direct & indirect employment village people.

B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.

C. Local work force will be given first preference for employment.

D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area)

**4 Impact assessment report along with proposed mitigation measures.**

Preparation of Environmental Management Plan is required for formulation, implementation, and monitoring of environmental protection measures during and after commissioning of projects. The plan should indicate the details as to how various measures have been proposed to be taken including cost components as may be required.

**1. Land Environment**

The type of mining and the characteristics of the mineral deposit both affect the degree to which mining disturbs the landscape. Sand Mining and allied activities will be done in the fluvial plain formed by river meandering. Mining of sand may cause a few environmental degradations.

**a. Anticipated Impacts:**

- ❖ Damage of riverbank due to access ramps to riverbed, may cause soil erosion.
- ❖ Destruction of river bank hinterland and ecological due to extraction of sand by probability of damage to the flood control bunds (built along the river side) due to heavy movements of vehicles over the bund to approach the mine area and further during transportation for sand from the mine area.
- ❖ Improper disposal of packing material, carried by the workers like used sachet/ gutka /pan masala pouches.
- ❖ Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations, borehole users due to dust, noise and it also causes traffic hazards.
- ❖ Surface degradation due to road network.

**b. Mitigation Measures:**

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- ❖ Safety distance of 3 meter or 1/10th of the width of the river whichever is more will be left from both the banks of the river (as per “Sustainable sand mining guidelines”).
- ❖ No foreign material like polythene bag, jute bag and useless articles should be allowed to remain/spill in river bed and catchment area, or no pits/pockets will be allowed to be filled with such material.
- ❖ Minimum number of access roads to river bed for which cutting of river banks will be avoided and ramps are to be maintained.
- ❖ Care will be taken to ensure that ponding is not formed in the river bed.
- ❖ Mining will not exceed beyond the allowed extraction capacity.
- ❖ Green belt will be developed along the haul road and the bank of rivers of mine premises and near the sand mining site. While selecting the plant species, preference will be given for planting native species of the area.

**3. Water Environment**

**a. Anticipated Impacts:**

- ❖ As the project activity is carried out in the dry part of river bed, none of the project activities will affect the water environment or riverbank habitats. Project activities will not have any adverse effect on the physical components of the environment and therefore may not have any effect on the recharge of ground waters or affect the water quality. Monitoring of water quality will be checked yearly.

**b. Mitigation Measures:**

- ❖ Mining is avoided during the monsoon season and at the time of floods. This will help in replenishment of sand in the riverbed.
- ❖ Mining below subterranean water level will be avoided as safeguard against environmental contamination and over exploitation of resources.
- ❖ River stream will not be diverted to form in active channels.
- ❖ Utmost care will be taken to minimize or control leakage vehicles to be used for sand transportation.
- ❖ The washing of tractor trolleys in the river will be avoided.
- ❖ The contractor will follow all guidelines and rules for proper and scientific method of mining during the period of extracting the sand.

**4. Air Environment:**

**a. Anticipated Impacts:**

**Due to Haul Road/ Access Road:**

- ❖ Plying of tractor trolleys from public road to river sand collection points needs access roads.
- ❖ Majority of such access roads are the same existing roads/tracks being used by pedestrians/cart owners. Movement of heavy vehicles sometimes causes problems to cattle, agriculture land, and human habitations due to dust, noise and movement of public.
- ❖ These environmental problems are felt more as the area is rural in nature.

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**Due to Mining process:**

- ❖ Air pollution is likely to be caused at various stages of sand mining operations such as excavation, loading & transportation of material.
- ❖ Most of the dust will be generated from loading & transportation. This dust becomes air borne and gets carried away to surrounding areas.
- ❖ The impact on air is mainly localized in nature as the dust particles are not carried to longer distances and the effect is felt within the core zone of the project involving active Sand mining operations.

**b. Mitigation Measures:**

**Mitigation of Impacts on Access Roads:**

- ❖ Movement of the vehicles on the road will be increased; however, unmetalled road in the mining area will be sprinkled with water at regular intervals.
- ❖ In addition to prevent spillage by tractor trolleys over loading should be controlled along with speed limit (1Brass /tractor trolley).
- ❖ Maintenance of haul road will be done on regular basis.

**c. For Fugitive Dust Emission:**

- ❖ To avoid fugitive dust emissions at the time of excavation, regular sprinkling of water will be done on regular basis.
- ❖ Sand is transported to the sites by road through tractor trolleys. The sand carrying vehicles shall be covered by tarpaulin sheets.
- ❖ The Green Belt development will be prepared along the haul roads, which will act as a pollution sink.
- ❖ To minimize the vehicular pollution from the sand transporting vehicles, the following conditions will insist to permit the vehicles of the transporters.
- ❖ The vehicles should be (Bharat-IV stage) compliant and should have pollution control certificate (PUC) issued by appropriate authorities.
- ❖ Regular maintenance of transport vehicles and monitoring of vehicular emission levels at periodical intervals.

**5. Noise:**

**a. Anticipated Impacts:**

Noise environment in this project will be affected only by the equipment at the site and vehicular transportation. Since slight increase in noise levels can be expected.

**b. Mitigation Measures:**

- ❖ Minimum use of Horns at the village area.
- ❖ Timely maintenance of vehicles and their silencers to minimize vibration and Sound.
- ❖ Phasing out of old and worn-out tractor trolleys.
- ❖ Provision of green belts along the road networks.
- ❖ Care will be taken to produce minimum sound during sand loading.
- ❖ Use of Backhoe and ear plugs may be provided to protect the labors working at the site.

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**6. Socio-Economic Environment**

This project operation will provide livelihood to the poorest section of the society.

**Anticipated Impacts and Evaluation:**

- ❖ The project activities shall not have any adverse impacts on any of the common property resources of the village communities, as the sand mine lease area is not being used for any purpose by any section of the society in this region.
- ❖ There is no R & R involvement in this project.
- ❖ There is no land acquisition in this project.
- ❖ The results of the field survey conducted to understand the knowledge and perception of the people living around the project area gives a clear idea about the need for the project.
- ❖ A major portion of the houses in the study area are semi- pucca type structures.
- ❖ The water source to these areas is from the municipal connection and private bore wells and wells. The awareness level regarding the proposed mining activity is very high. The proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes.

**a. Social and Demographic Profile:**

The workers are from local villages. These people have been provided all welfare from a lessee like medical benefits, insurance, fees for children's education etc. They have some land and cattle for their daily earnings. Additional income earned from the Sand Mining work will improve their living standard. The group of quarries in and around will help to have infrastructure facilities like roads, schools, shops etc. This will improve their social life.

**b. Occupational Health and Safety:**

This is Riverbed Sand Mine. So, the mining activities are comparatively less because the production is not on large scale. Workers do not come across any extreme condition like excessive heat, moisture etc. Workers working around it may come across this dusty environment, which can be managed by providing face mask.

**c. Human Settlement:**

There are no houses in and around lease area. All the due precautions will be taken during mining. Transport of finished products is through the villages. There will be psychological impact of the traffic on the local people. However, the intensity of traffic is less.

**d. Health and Hygiene:**

In general, the health of villagers is moderately good. In the rainy season, the atmospheric condition is unhygienic due to lack of proper drainage and sanitation in the village habitation. Villagers are working in agricultural fields and work as laborers.

**e. Education:**

***Fupanagari sand spot over an extent of 4.84Ha At Girna River Bed Gut No.66 & 67, Fupanagari Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.***

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- a. Mostly education is up to middle standard. Economic condition is in general moderate. So, after this project the standard of education will be increase.

**f. Socio Economic Benefits Arising Out of Mining:**

- a. Generation of employment in the rural area.  
b. Improvement in the living standards of the rural people.  
c. Creating of infrastructural facilities like roads, electricity, shops, school etc.  
d. Helping to improve literacy in the area Exploiting natural mineral so generation of revenue.  
e. Helping to sustain construction activity.  
f. Improving the greenery of the area, this is otherwise poor.

**g. Liquid Effluent:**

Not applicable because small mine and impacts are negligible.

**h. Solid Waste:**

Not applicable because small mine and impacts are negligible.

**6. Biological Environment**

**Anticipated Impacts:**

- ❖ **Aquatic environment-** Proposed mining of the dry bed of the river, so no possibility of disturbance of aquatic life.
- ❖ **Flora and Fauna-** The mining activity will have insignificant effect on the existing flora and fauna. The project area is surrounded with agricultural land. It was found that the sand mining activity will not have any significant impact on the biological environment of the region.

**Mitigation Measures:**

- ❖ Improvement in riverbank stability.
- ❖ Large woody debris in the riparian zone will be left undisturbed or replaced when moved and not be burnt.
- ❖ Vegetative debris will not be stored within the mine lease area.
- ❖ Operation and storage of heavy vehicles within riparian habitat will be restricted.
- ❖ Covering of loaded vehicles to reduce dust emission, which may harm surrounding agricultural crops and other plant species conservation of biological diversity of plants, birds, and animals.
- ❖ Greenbelt Development and Bio-Diversity Preservation Plantation activities will be carried out at the bank of the river and along the haul roads. This activity will help for maintaining ecology and environment of the area.

**5 Project Benefits**

The proposed expansion project will lead to the following benefits:

- Sand is available for Building and Construction work and by regular removal of sand there is no possibility of flood.
- This project will contribute additional revenue to the state Exchequer in the form of revenue.

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- The project will result in the employment opportunities to the unskilled/skilled local people. Thereby, the quality of life of the employed people will increase.

**6 Sand Ghat Closure Plan**

S. No	Head	Area put on. use at start of plan [in Ha]	Additional Requirement during Plan period [in Ha]	Total [in Ha]	Area considered as	Net consider for calculation
1	Area under mining / pit	-	4.84	4.84	4.84	4.84
2	Area under dump	NIL	---	---	---	---
3	Infrastructure Workshop Administrative Building etc.	--	--	--	--	--
4	Roads	--	--	--	--	--
5	Mineral reject	--	--	--	--	--
6	Green Belt Plantation /Soil dump	--	--	--	--	--
7	Tailing Dam /pond	--	--	--	--	--
8	Effluent Treatment Plant	--	--	--	--	--
9	Mineral storage	--	--	--	--	--
10	Township area	--	--	--	--	--
11	Other to specify	--	--	--	--	--
<b>GRAND TOTAL</b>			4.84	4.84	4.84	4.84

- ❖ Mining will be avoided during monsoon and floods; this will allow the sand deposit to replenish.
- ❖ Gabion structure will be constructed for the sand to replenish during monsoon season.

**7 Planning brief:**

The proposed project is opencast manual sand mining activity.

Supply demand ratio:

Information required on demand and supply of district (2023-24)			
S.No.	Name of District	Total sand Demand of District in Brass	Total Sand Available in district in Brass



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1	Jalgaon	191380	104531
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**8 Compliance of earlier Environmental Clearance**

- ❖ Fupanagari sand spot of Fupanagari village of Jalgaon tehsil has got environmental clearance in the year 2016-2017 but the sand ghat didn't get a response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot.

**9 Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020.**

- ❖ District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- ❖ Appropriate feedback and its redressal mechanism shall also be made operational.
- ❖ Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- ❖ Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- ❖ The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- ❖ Printed on Indian Bank Association (IBA) Approved
- ❖ Magnetic Ink Character Recognition Code (MICR) paper
- ❖ Unique Barcode
- ❖ Unique Quick Response Code (QR)
- ❖ Fugitive Ink Background
- ❖ Invisible Ink Mark
- ❖ Void Pantograph
- ❖ Watermark
- ❖ GPS BASED VEHICLE TRACKING SYSTEM
- ❖ CCTV Camera

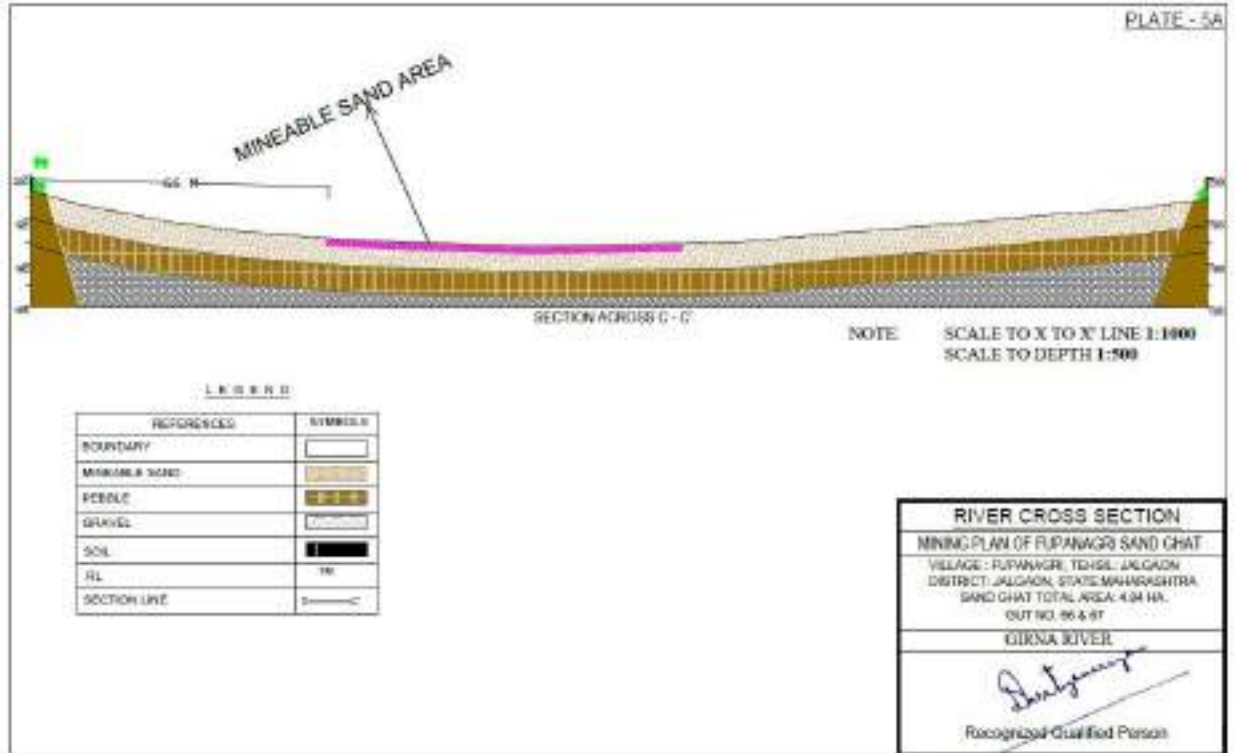
**Cluster certificate with reference to the EIA Notification 2006 amended from time to time with specific remarks on the cluster formation in the periphery of the proposed sand ghat along with area map showing distances between adjoining sand mine areas.**

Fupanagari does not form a cluster.



**Fupanagari sand spot over an extent of 4.84Ha At Girna River Bed Gut No.66 & 67, Fupanagari Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

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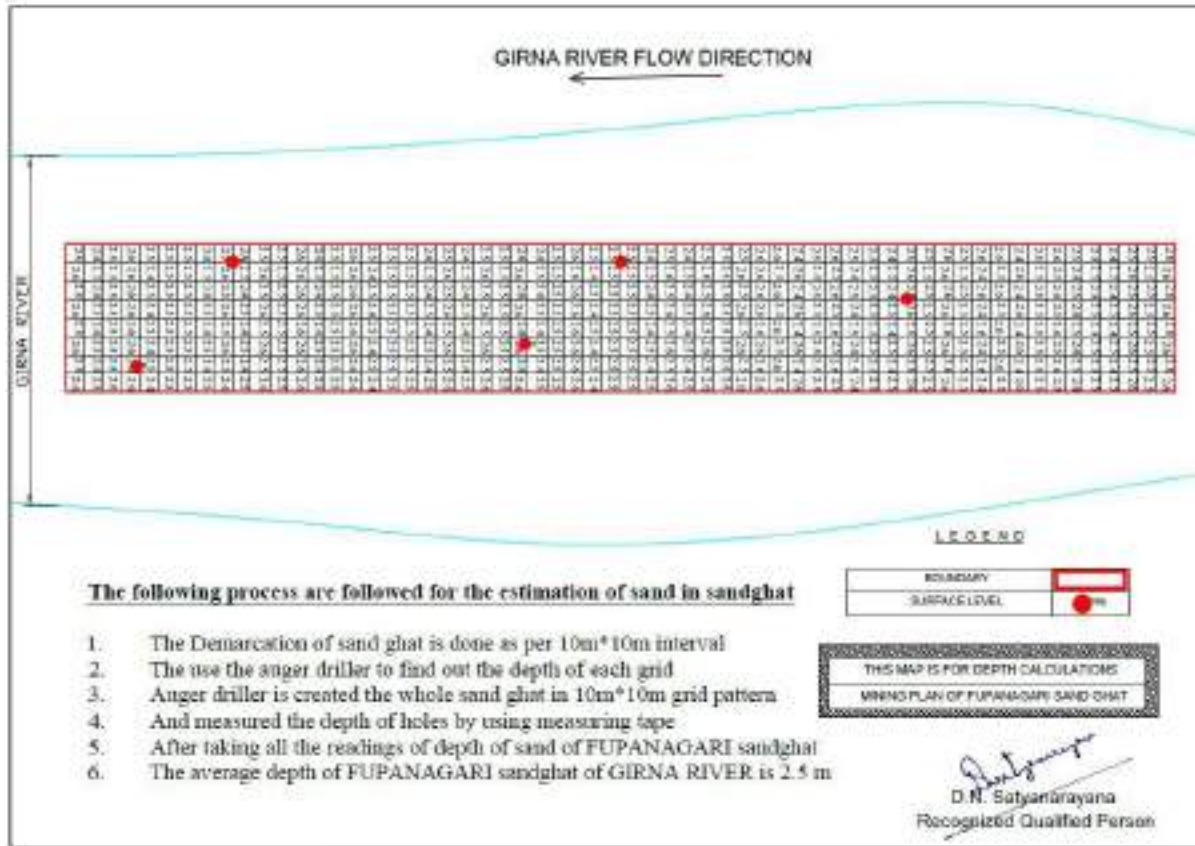
**13. Details of District Level Task Force committee meetings and status of compliance of its recommendations if any.**

District Level Task Force Committee Meeting details is enclosed.

**14. Methodology for Sand Mining:**

**Fupanagari sand spot over an extent of 4.84Ha At Girna River Bed Gut No.66 & 67, Fupanagari Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

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15. Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.

**DANDY-BOLTON EQUATION**

1. **For Runoff Less Than 2 Inches**  
 $S = 1280 * (Q)^{0.46} * (16 - 0.26 \log(A)) * F$
2. **For Runoff More Than 2 Inches**  
 $S = 1958 * (Q)^{0.46} * (e^{-0.055 * Q}) * (13 - 0.26 \log(A))$

Where

- S= sediment yield of stream (t/yr./km<sup>2</sup>),
- Q= average annual runoff (m<sup>3</sup>),
- A= net drainage area in sq. Mile

The sediment yield of Girna river at Girana dam station is 4.612\*10<sup>20</sup> tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation.

(Source: State Irrigation Department)

**Fupanagari sand spot over an extent of 4.84Ha At Girna River Bed Gut No.66 & 67, Fupanagari Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

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**Conclusion:**

As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**16 PP to submit details of proposed plantation plan along with its location and requisite permission to be obtained from the Competent Authority.**

Plantation details are presented below:

<b>Location of greenbelt</b>	Both sides of approach road, On the riverbanks of both sides of the sand spot & nearby open areas. Haul Road outside riverbed.
<b>No. of plants to be planted</b>	1024
<b>Spacing of plants</b>	4 m grid interval
<b>Species selected</b>	Native species

Tree species recommended for Plantation:

<b>Botanical name</b>	<b>Local name</b>	<b>Importance</b>
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

**17 BUDGET FOR CORPORATE ENVIRONMENT RESPONSIBILITY (CER)**

About 2% fund of the project cost is allocated for Corporate Environment Responsibility (CER) activities as presented in below Table:

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**Environmental Management Plan**

SNo.	Budget Allocated	Budget (In INR)
1	Installation of one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	35000
3	Needed Repairing work with consultation of Grampanchayat	35000
4	Community Infrastructure Development(Steel fencing to ZP school with consultation of Grampanchayat)	150000
Total		3,00,000

**18 Environmental Management Plan (EMP)**

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR **301125** and recurring cost provision of about INR **365980** has been kept in the project cost towards the environmental protection, control and mitigation measures and implementation of the EMP, this cost is born by bidder / lease holder. The budgetary cost estimate for the EMP is given in Table.

**Table 6: Environmental Budget**

Fupanagari			EMP Budget		
SNo.	Component	Description	Capital cost Rs.	Recurring Cost Rs.	Total Cost in Rs
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	36100	36100
3	Approach Road Maintenance		-	28880	28880
4	Green Belt Plantation	Along the River Bank	75625	-	75625
		Along the Approach Road	180500	-	180500
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	5000	-	5000
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	75000	75000
7	Security	Display Boards and other security measures	10000		10000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health check-up (1000Rs./	-	76000	76000

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		Employee)			
9	Tarpaulin Cover (5000 INR per one Cover)		30000		30000
<b>Total</b>			<b>301125</b>	<b>365980</b>	<b>667105</b>

**19 Public Consultation Report**

Jalgaon					
S.No	Villager Name/Village,Taluka	Type of Person (Villager/Government Official)	Query raised by the Villager/Official	Response from the Proponent	Action Plan

**20 Summary and Conclusion**

The environmental status of the project site and study area of 10 km radius is delineated with respect to air, noise, water, land, biological and socio-economic environment the different project activities in the construction and operation phases are identified. To identify the impacts, the interaction between the project activities and different components of the environment are classified phase wise. A summary of the identified impacts is given in the following paragraphs.

During the operational phase, transportation of sand could cause a temporary disturbance to local environment which will be prevented with the proposed mitigation measures proposed in Point no. 4.

Proposed project will not have any major significant negative impacts. The minor impacts arising out during Excavation and Transportation phases can be mitigated with the help of the proposed Environmental Management Plan.

In general, Sand excavation from Fupanagari Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

### **PRE-FEASIBILITY REPORT**

The Fupanagari Sand Spot is situated at Village Fupanagari , Taluka Jalgaon, District- Jalgaon. Sand Spot is 4.84Ha of area in Gut No 66 & 67 of Fupanagari village of Jalgaon Tehsil, Jalgaon district. Detail of the project is summarised below

- District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- District Collector Jalgaon appointed M/s Integrated Precision Systems & Services Pvt. Ltd., for preparation of Mining Plan and grant of environmental clearance.
- Applicant proposed to auction the said Sand Spot over an area of 4.84Ha area and identified for preparation of mining plan and for grant of Environmental Clearance.
- Mining Plans are prepared by Recognized Qualified Person and approved by Directorate of Geology & Mining Govt. of Maharashtra.
- About 8551 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Girna river bank.

#### **1. Physiography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 189 to 192 from MSL i.e 3m. The Highest contour value is 192 and lower is 189. The flow direction of GIRNA river is towards SW

#### **2. Local Geology**

The local geology is Sand of various size up to depth of 2.5- 3meter.

#### **3. Details of Exploration**



There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the river bed.

Mining - The mining will be continued with present method of open cast mining by cutting slice of 0.5m of Sand along topo-relief, by advancing from SW to NE direction as per allotted area by auction. The production can be at the rate of 24200 Cu.m or 8551 brass i.e. 1 year from the date of mining plan approval, the size of pit at the end will be 4.84Ha.

### **Introduction of the project/ background information**

The Fupanagari Sand Spot has been kept for Auction which is situated at Village Fupanagari , Taluka Jalgaon , and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

#### **i) Brief description of project**

The Sand Spot has sufficient Reserve of Sand to work at 24200 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m area of Sand by advancing from North to South direction as per allotted Sand Spot area and handling of material with the help of labourer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

#### **ii) Need for the project**

The Sand or Sand Spot under reference is aimed at exploring Sand as ROM in various sizes i.e. fine to Coarse grain which is Transported to consumer site in outside Sand Spot area, for the infrastructure development i.e. Construction activity to produce Concrete for putting in the floor, roof- slabs, Column, Pillars, Bridges & Dam construction.

### **3. Project Description**

This mining project is an independent project and not an interlinked project.

#### **i) Location**

Fupanagari is a small Village in Jalgaon Taluka in Jalgaon District of Maharashtra State, India. It comes under Fupanagari Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 9.9KM towards N from District headquarters Jalgaon. The Sand Ghat is 348KM from State capital Mumbai.

Area covered in SOI Toposheet No- 46P/8

The boundary pillars of Sand Spot area are given below with GPS values.

<b>Boundary Points Fupanagari</b>	<b>Latitude</b>	<b>Longitude</b>
BP1	21° 4'35.03"N	75°29'30.16"E

BP2	21° 4'25.19"N	75°29'28.58"E
BP3	21° 4'25.58"N	75°29'25.84"E
BP4	21° 4'35.66"N	75°29'27.46"E
BP5	21° 4'44.89"N	75°29'30.61"E
BP6	21° 4'44.10"N	75°29'33.25"E

**ii) Alternate Sites**

No alternate site is proposed.

**iii) Magnitude of Operation**

Proposed period for mining of sand will be decided by the office of district collectorate 24200 cu.m. will be excavated during the period.

**iv) Project description-mining details**

The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 605m L X 80m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable. The Sand Spot has sufficient Reserve of Sand to work at 24200 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m slice of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**v) Raw material, marketing & transport of ore**

The proposed sand spot will be auctioned, and successful bidder will be responsible for carrying out mining operations as per environmental terms and conditions, approved mining method as per approved mining plan and other terms and conditions. The loading of Sand generated to the tractor/tipper/dumpers will be done by loaders & material transported to the Dealer site.

**vi) Resource optimization, recycle, reuse**

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

**vii) Water & energy requirement**

The major water requirement in the lease area is for dust suppression and for drinking use. The total water requirement is estimated as 5.4 KLD the required water for dust suppression can be arranged through tankers from nearby village and drinking water will be provided in earthen pots for labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

**viii) Quantity of waste & scheme for management**

There will not be any waste generation within the lease area.

**ix) Schematic Representations**

It is a proposal of opencast manual sand mining from river bed. Mining plan is approved by the competent authority.

**4. Site Analysis**

**i) Connectivity**

Fupanagari is a small Village in Jalgaon Taluka in Jalgaon District of Maharashtra State, India. The sand spot area is connected to approach road at a distance of 722 m in South direction. Jalgaon Railway Station is present at a distance of 10km.

**ii) Land Use, form & Ownership**

The ultimate land use pattern for the lease area of 4.84Ha. will be consisting of

- |                                    |   |          |
|------------------------------------|---|----------|
| 1. Mining Area                     | : | 4.84Ha.  |
| 2. Construction of Temporary Roads | : | 0.00 ha. |
| 3. Total                           | : | 4.84Ha.  |

At present ownership of this sand spot area is in the hand of Govt. of Maharashtra, after approval of mining plan and EC quarry area will be transfer to bidder after auction.

**iii) Geology**

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

**Existing land use pattern**

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

**Social-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- A. The mining operations will provide direct & indirect employment village people.
- B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.

- C. Local work force will be given first preference for employment.
- D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area).

**Planning brief:**

**The proposed project is opencast manual sand mining activity.**

**Supply demand ratio:**

<b>Information required on demand and supply of district (2023-24)</b>			
<b>S.No.</b>	<b>Name of District</b>	<b>Total sand Demand of District in Brass</b>	<b>Total Sand Available of district in Brass</b>
1	Jalgaon	191380	104531

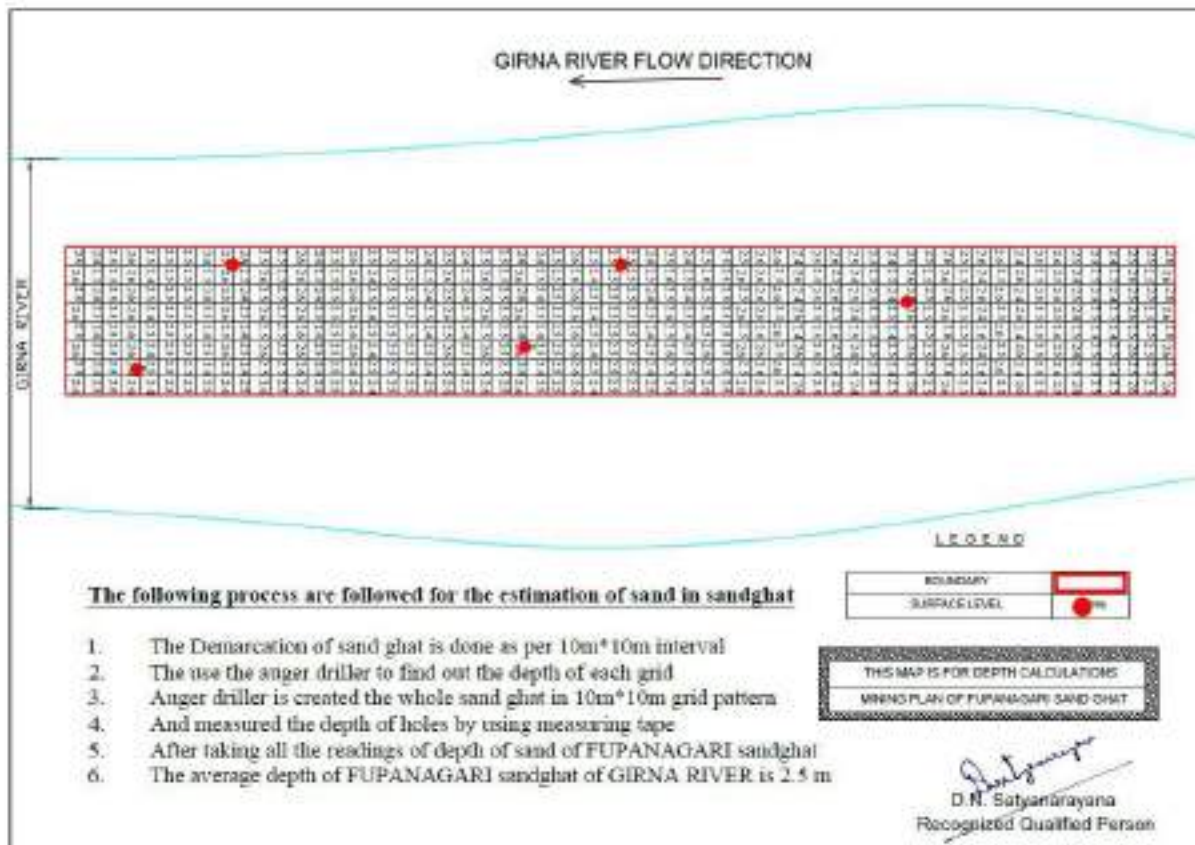
**Replenishment:**

- Area of deposition and erosion was calculated for each cross-section after giving due regard to stability & safety of active channel banks & other features of importance.
- DGPS and other survey tools have been used to define topography, contours and offsets of lease area.
- Contour & elevation benchmarks are provided with the baseline data for assessing pre and post-study period scenario.
- Physical benchmarks are fixed at intervals (1 in 30 m) & Reduced Levels (RL) are validated from a nearby standard RL.
- These RL are engraved on a steel plate (Bench Plate) & are fixed & placed at locations which are free from any damages & are available in pre and post-study period.
- Bench plates are available for use during the mining period as reference for all mining activity.
- Baseline data on elevation status for a grid of 10 m x 10 m is taken to ensure the accuracy in the assessment.
- It was made sure that two consecutive cross-sections in longitudinal and lateral direction is not be more than 10-meter distance apart.
- Changes have been observed in the elevation in pre and post scenario at each node and were depicted in graphical forms with an appropriate scale for estimating the area of deposition & erosion.
- Elevation level was placed in reference to the nearest bench-plates established for the purpose.
- The levels (MSL & RL) of corner point of each grid were identified and safety barriers (Non-Mining) are demarcated as restricted in consensus with Mineral Concession Rules of respective State, and the provision mentioned in this Sustainable Sand Mining Management Guidelines.
- A clear identification was highlighted between grids under mineable and grids under the non-mineable area. These baseline data (pre and post) was subjected to stimulation

with the help of data mine software to derive at the replenishment area and corresponding volume and estimated weight.

- The database was structured in a tabulated form clearly depicting the nomenclature of the section lines, latitude and longitude of the starting point, chain-age and respective levels of all the points taken on that section line.
- Net area was derived after summation of area of deposition minus area of erosion for each cross-section.
- Volume was estimated by multiplying distance between two cross-sections with average of net area of these two consecutive cross-sections.
- One sample per 900 square meters (30 m x 30 m) was preferred for sample density for assessment of bulk density for estimation of deposition rate.
- Care was taken that the sample for assessment of bulk density is taken from the deposition zone & not from erosion.

**Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.**



**DANDY-BOLTON EQUATION**

1. **For Runoff Less Than 2 Inches**

$$S = *1280*(Q)*0.46*(1.46-0.26\log(A)) *F$$

**2. For Runoff More Than 2 Inches**

$$S=1958(Q)^{0.055} (1.43-0.26\log(A))$$

Where

S=sediment yield of stream (t/yr./km<sup>2</sup>),

Q= average annual runoff (m<sup>3</sup>),

A= net drainage area in sq. mile

- The sediment yield of Girna river at Girana dam station is 4.612\*1020 tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation..

**(Source: State Irrigation Department)**

**Conclusion:**

As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020**

- District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- Appropriate feedback and its redressal mechanism shall also be made operational.
- Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- Printed on Indian Bank Association (IBA) Approved
- Magnetic Ink Character Recognition Code (MICR) paper
- Unique Barcode
- Unique Quick Response Code (QR)
- Fugitive Ink Background
- Invisible Ink Mark

- Void Pantograph
- Watermark
- CCTV at mine lease site
- GPS Based Vehicle Tracking System

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided outside Sand Spot area.

#### **Compliance of earlier Environmental Clearance**

- ❖ Fupanagari has got earlier Environment clearance in the year 2016-2017. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

#### **7. Proposed Infrastructure**

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided in outside Sand Spot area.

#### **8. R&R Plan**

R&R is not involved.

#### **9. Project schedule**

Period of mining for the proposed sand spot will be decided by the Office of District Collectorate.

#### **10. Analysis of Proposal**

Description of the project included in items 1-10 above indicates the following:

1. It is proposed for opencast manual river sand mining.
2. Opencast mining without hampering the present environmental quality of the area.
3. Income to local people is uncertain & initiation of mining will ensure regular income to local people.

#### **11. Costing**

Costing parameters will be decided by the District Authorities.

#### **12. Compliance to Environment Clearance**

Whether there are any serious violation of safety rules and regulation which may jeopardize human health and safety. If so, give details of violations and state the steps proposed to be taken with the time scheduled to rectify the violations:

No, there are not any serious violation of safety rules and regulation, which may jeopardize human health and safety. The applicant has given a commitment in this effect and undertaking also given to follow and implement, as specified in the mining plan. The applicant is undertake to abide and implement any special conditions imposed by various authorities and also to complete formalities under provision of the Mines & Mineral (Development & Regulation) Act, 1957 and the Bombay Minor Mineral rules, the Mineral Conservation and Development Rules, 1988 as amended, the Maharashtra Minor Minerals Extraction

(Development and Regulation) Rule 2013, MoEF&CC Notification S.O. 141 (E) dated 15th January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, Sustainable Sand Mining Management Guidelines 2019, Sand Mining Policy 2020

**13. Any Other Information:**

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule-2013, MoEF&CC Notification S.O. 141 (E) dated 15<sup>th</sup> January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.05.1994 and 04.09.2006.



**Risk Assessment for Fupanagari Sand Spot**

**1. Introduction**

A main principle of risk assessment is that it should take place before any changes are made. Risks should be assessed and control measures are put into action before new work is introduced or systems are changed. The process should influence budgets and allocation of resources, rather than being an afterthought when the decisions have already been made.

The risk management process is continuous, with well-defined steps that support better decision making by contributing greater insight into risks and their impacts. Risks from all sources are identified and once they pass the materiality threshold, a formal process begins in which causal factors and consequences are identified and the correlation with other risks and the current risk mitigating strategy is reviewed. One of the challenges is to ensure that mitigating strategies are geared to deliver reliable and timely risk information to support better decision-making.



The mining operations at FUPANAGARI SAND SPOT are subjected to the risks and hazards normally encountered in open-cast mining operations. These risks include operational risks relating to

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materials handling, accidents, removing material from quarry area. Mining processes also rely on key inputs, for example fuel. Appropriate insurance can provide protection from some, but not all, the costs that may arise from unforeseen events. If any of these risks should materialize, such an event could result in serious harm to employees and contractors, delays in production, increased production costs and possible increase in liabilities.

Disruption to the supply of key inputs, or changes in their pricing, may have a material and adverse impact on FUPANAGARI SAND SPOT asset values, costs, earnings and cash flows. Failure to meet production target results in increased unit costs. The impact is more pronounced at operations with a high level of fixed costs. Mitigation strategies include efforts to secure strategic supplies at competitive prices, energy reduction, and application of group water management guidelines, adoption of lean production principles and practices and business improvement initiatives to reduce unit costs.

There are certain aspects which should be taken care of, in a quarrying plan with accordance of risk management.

<b>Components</b>	<b>Risk Involved</b>
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
Fire	Only trucks and tractors will make use of diesel for transportation. Diesel is not so highly inflammable but accidental fires can take place.
Road Accidents	Vehicles are used for transporting the material from quarry area to the buyer's location. Due to some improper maintenance of the vehicle a road accident can occur leading to fatal results.

To minimize the risk, certain measures can be taken like implying safety rules, facilities of basic first aid near the site and having training for the workers about personal safety.

Disaster Management Plan is envisaged with a goal to prevent hazards and accidents at work places by careful design, operation, and maintenance of equipment's. All safety precautions and provisions of Metalliferous Mines Regulation-1961 will be strictly followed. Suitable control measures will be adopted to take care of hazards/disasters that may occur during mining operation.

- No mining activities during rainy days or just after heavy rain.
  - Fire fighting, first aid provisions & safety appliances will be made available to the staff and their use regularly checked
  - Regular maintenance of all haulage roads & mining machinery as per manufacturer's guidelines will be done
-

**APPENDIX VIII  
(See paragraph 6)**

**FORM 1 M**

**APPLICATION FOR MINING OF MINOR MINERALS UNDER CATEGORY 'B2' FOR LESS THAN AND EQUAL TO FIVE HECTARE**

**(I) Basic Information**

(i) Name of the Mining Lease site: Hanmantkhede Sim Part-1 Sand Spot

(ii) Location / site (GPS Co-ordinates):

<b>Boundary Points Hanmantkhede Sim Part-1</b>	<b>LATITUDE</b>	<b>LONGITUDE</b>
BP1	20°48'4.26"N	75°23'54.80"E
BP2	20°47'51.92"N	75°23'54.85"E
BP3	20°47'51.91"N	75°23'52.60"E
BP4	20°48'4.25"N	75°23'52.55"E

(iii) Size of the Mining Lease (Hectare): 2.47HA

(vi) Capacity of Mining Lease (TPA): 4363 Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 26.18 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, Maharashtra

**(II) Environmental Sensitivity**

<b>S. No.</b>	<b>Areas</b>	<b>Distance in Kilometer/Details</b>
1	Distance of project site from nearest rail or road bridge over the concerned River, Rivulet, Nallah etc.	Bridge, 9.4Km, NE
2	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road Any Other Road Electric transmission line pole or tower Canal or check dam or reservoirs or lake or	Maheji Railway Station, 4.30Km, SE NH-53, 15.6Km, NW SH-184, 5.6Km, SE Highway, 0.69Km, W  0.5Km S

**Hanmantkhede Sim Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Hanmantkhede Sim Part-1 Village, Tehsil- Erandol, Jalgaon District, Maharashtra..**

Form 1M

Page: 2 of 2

	ponds In-take for drinking water pump house Intake for Irrigation canal pumps	
3	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil
4	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Water bodies: this is the case of river sand mining in Girna River bed; RF, 7.8Km, SE
5	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil
6	Inland, coastal, marine or underground waters	Girna River bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	NH-53, 15.6Km, NW SH-184, 5.6Km, SE Highway, 0.69Km, W
9	Defence installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Hanumankhedesim, 1.4Km, SW
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Jilha Parishad School, 1.60Km, SW Dr A P Patil - Hospital, 1.51Km, SW
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Girna River Bed ( this is the case of river sand mining) RF, 7.8Km, SE
13	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil
14	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse	The mine lease area falls in Seismic Zone III (Moderate), according to the Indian Standard Seismic Zoning Map.

**Hanmantkhede Sim Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Hanmantkhede Sim Part-1 Village, Tehsil- Erandol, Jalgaon District, Maharashtra..**

Form 1M

Page: 3 of 2

	climatic conditions)	
15	Is proposed mining site located over or near fissure / fracture for ground water recharge	No
16	Whether the proposal involves approval or clearance under the following Regulations or Acts, namely:- (a) The Forest (Conservation) Act, 1980; (b) The Wildlife (Protection) Act, 1972; (c) The Coastal Regulation Zone Notification, 2011. If yes, details of the same and their status to be given.	No
17	Forest land involved (hectares)	Nil
18	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Orders or directions of the Court, if any, and its relevance with the proposed project.	Nil

***Hanmantkhede Sim Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Hanmantkhede Sim Part-1 Village, Tehsil Erandol, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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## **ENVIRONMENTAL MANAGEMENT PLAN**

### **1 Introduction**

Ministry of Environment, Forest & Climate Change (MoEF&CC) Notification 2006 and Sustainable Sand Mining Management Guidelines 2016 and as per provision in Mines and Minerals (Development and Regulation) Act 1957 Schedule 60 section 15, Govt Of Maharashtra makes a Minor Mineral Extraction Rules 2013 to extract all the minor mineral in scientific way so that there is no adverse impact on Environment and Climate. To extract every minor mineral from any land (either Government or Private) there is provision of mining plan which is approved by competent authority; For long term leased minor mineral (5 – 10 years period) and Sand excavation from river bed, Senior Deputy Director of Directorate of Geology and Mining is a Competent authority, for short term Temporary permits which is valid for one year, Committee headed by Hon. Collector is Final authority to Approved the District Mining Plan.

As per Minor Mineral Extraction Rules 2013 Rules 70, Disposal of sand from River bed, Nallah and creeks by way of public auction, in this regards Govt resolution Gaukhni -10/0615/case No. 289/kha dated 3rd January 2018 is applicable in entire state. As per Enforcement & Monitoring Guidelines for Sand Mining 2020 Sustainable sand mining management guidelines 2016, Standard Environment condition for sand mining and sustainable mining practices, district level survey report should be prepared and area suitable for mining and area prohibited for mining be identified.

### **2 Project Description**

Hanmantkhede Sim is a small Village in Erandol Taluka in Jalgaon District of Maharashtra State, India. It comes under Hanmantkhede Sim Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 29KM towards N from District headquarters Jalgaon. The Sand Ghat is 317 KM from State capital Mumbai.

Area covered in SOI Toposheet No- 46P/5 and 46P/6

The boundary pillars of Sand Spot area are given below with GPS values.

**Table 1: Salient Features of the Project**

**Hanmantkhede Sim Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Hanmantkhede Sim Part-1 Village, Tehsil Erandol, Jalgaon District, Maharashtra.**

***Environmental Management Plan***

Items	Details															
Location	Village- Hanmantkhede Sim , Tehsil- Erandol District-Jalgaon, Maharashtra.															
Latitude and Longitude	<table border="1"> <thead> <tr> <th>Boundary Points Hanmantkhede Sim Part-1</th> <th>LATITUDE</th> <th>LONGITUDE</th> </tr> </thead> <tbody> <tr> <td>BP1</td> <td>20°48'4.26"N</td> <td>75°23'54.80"E</td> </tr> <tr> <td>BP2</td> <td>20°47'51.92"N</td> <td>75°23'54.85"E</td> </tr> <tr> <td>BP3</td> <td>20°47'51.91"N</td> <td>75°23'52.60"E</td> </tr> <tr> <td>BP4</td> <td>20°48'4.25"N</td> <td>75°23'52.55"E</td> </tr> </tbody> </table>	Boundary Points Hanmantkhede Sim Part-1	LATITUDE	LONGITUDE	BP1	20°48'4.26"N	75°23'54.80"E	BP2	20°47'51.92"N	75°23'54.85"E	BP3	20°47'51.91"N	75°23'52.60"E	BP4	20°48'4.25"N	75°23'52.55"E
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BP3	20°47'51.91"N	75°23'52.60"E														
BP4	20°48'4.25"N	75°23'52.55"E														
Sand spot area (In Ha)	2.47															
Proposed production capacity (In Brass)	4363															
Manpower Requirement (considering 3-month period)	35 labours + 2 mate + 2 Supervisor=39 manpower															
Infrastructure Requirement (As per Govt Resolution 3rd January 2018)	1. Room / Hut for Official records 2. Electricity / Battery for Running CCTV on 24X 7 daily. 3. One Computer / Android base Mobile for the online generation of Invoice number.															
Water requirement & source	4.4 KLD – Tankers from nearby village.															
Project cost INR (Lakh)	27.45 Lakhs															

***Hanmantkhede Sim Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Hanmantkhede Sim Part-1 Village, Tehsil Erandol, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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**3 Baseline Environmental Status**

**i. Topography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Amalner, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Amalner, Erandol, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Amalner, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 238 to 240 from MSL i.e 2m. The Highest contour value is 240 and lower is 238. The flow direction of Girna river is towards SW.

**ii. Hydrology**

The will be no change in water table during mining operation, as the depth of mining shall be restricted to 0.5m water level, which is less likely to affect surface level or ground water table. There is no



***Hanmantkhede Sim Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Hanmantkhede Sim Part-1 Village, Tehsil Erandol, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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proposal of any stream modification/diversion due to this mining activity hence there will be no impact on flow of water.

**iii. Soil Environment**

The area is not having any top soil or fertile soil. The depth of mining shall be restricted to 0.5m. There is no major impact on soil of the study area due to mining activities

**iv. Land Use Land Cover**

The project area does not consist of any forest land. It does not consist of any human habitations. Any change in scope of mining as per approved mining plan can lead to bank erosion /cutting and thereby river channel shifting degradation of land, causing loss of properties and degradation of surrounding landscape.

**v. Water Environment**

There will not be any waste water discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 0.5m only so there will not be any intersection with ground water table. It is observed from the dug well in the adjacent plain area and in the nearby villages that the ground water table varies depending upon seasonal variations. The depth to water levels in the district ranges from 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 0.5m that too within the river course and the total mining operation will be achieved through manual means, there will be no effect on ground water table. All the stipulations of MoEF for sand mining and guidelines as per the Maharashtra Minor Mineral Extraction [Development and Regulation] Rules, 2013 of Section 15 of MMDR Act 1957 [67 of 1957] will be followed. Hence, impact on water regime due to the proposed sand mining is not anticipated.

1. Precautionary measures will be initiated for closing the operation and shifting the men and transport vehicles prior to onset of monsoon.
2. No oils or lubricants will be discharged in the sand to avoid water pollution.

**vi. Climate**

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

**vii. Biological Environment**

The project is only of extraction of minor minerals viz. sand from the river quarry.

Flora: The area is completely barren and devoid of any vegetation in the river. Only few thorny bushes are seen on the banks of the River.

Fauna: As there is no forest cover, no wild life can be seen in this area.

***Hanmantkhede Sim Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Hanmantkhede Sim Part-1 Village, Tehsil Erandol, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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1. There will be no significant impact of the river quarry mining project on the biological diversity found in the 5km. radius of the site.
2. The mining lease area is in non-forest land i.e. sandy river quarry where presence of fauna is not at all seen. As such, there will be no adverse impact of the manual mining activity on fauna around the mining lease area.
3. No adverse impacts will be envisaged on the existing aquatic fauna, on downstream side (away from site) as the mining confined to above water level only and at all touching/disturbing water table.

**viii. Socio-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- A. The mining operations will provide direct & indirect employment village people.
- B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- C. Local work force will be given first preference for employment.
- D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area)

**4 Impact assessment report along with proposed mitigation measures.**

Preparation of Environmental Management Plan is required for formulation, implementation, and monitoring of environmental protection measures during and after commissioning of projects. The plan should indicate the details as to how various measures have been proposed to be taken including cost components as may be required.

**1. Land Environment**

The type of mining and the characteristics of the mineral deposit both affect the degree to which mining disturbs the landscape. Sand Mining and allied activities will be done in the fluvial plain formed by river meandering. Mining of sand may cause a few environmental degradations.

**a. Anticipated Impacts:**

- ❖ Damage of riverbank due to access ramps to riverbed, may cause soil erosion.
- ❖ Destruction of river bank hinterland and ecological due to extraction of sand by probability of damage to the flood control bunds (built along the river side) due to heavy movements of vehicles over the bund to approach the mine area and further during transportation for sand from the mine area.
- ❖ Improper disposal of packing material, carried by the workers like used sachet/ gutka /pan masala pouches.

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**Environmental Management Plan**

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- ❖ Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations, borehole users due to dust, noise and it also causes traffic hazards.
- ❖ Surface degradation due to road network.

**b. Mitigation Measures:**

- ❖ Safety distance of 3 meter or 1/10th of the width of the river whichever is more will be left from both the banks of the river (as per “Sustainable sand mining guidelines”).
- ❖ No foreign material like polythene bag, jute bag and useless articles should be allowed to remain/spill in river bed and catchment area, or no pits/pockets will be allowed to be filled with such material.
- ❖ Minimum number of access roads to river bed for which cutting of river banks will be avoided and ramps are to be maintained.
- ❖ Care will be taken to ensure that ponding is not formed in the river bed.
- ❖ Mining will not exceed beyond the allowed extraction capacity.
- ❖ Green belt will be developed along the haul road and the bank of rivers of mine premises and near the sand mining site. While selecting the plant species, preference will be given for planting native species of the area.

**3. Water Environment**

**a. Anticipated Impacts:**

- ❖ As the project activity is carried out in the dry part of river bed, none of the project activities will affect the water environment or riverbank habitats. Project activities will not have any adverse effect on the physical components of the environment and therefore may not have any effect on the recharge of ground waters or affect the water quality. Monitoring of water quality will be checked yearly.

**b. Mitigation Measures:**

- ❖ Mining is avoided during the monsoon season and at the time of floods. This will help in replenishment of sand in the riverbed.
- ❖ Mining below subterranean water level will be avoided as safeguard against environmental contamination and over exploitation of resources.
- ❖ River stream will not be diverted to form in active channels.
- ❖ Utmost care will be taken to minimize or control leakage vehicles to be used for sand transportation.
- ❖ The washing of tractor trolleys in the river will be avoided.
- ❖ The contractor will follow all guidelines and rules for proper and scientific method of mining during the period of extracting the sand.

**4. Air Environment:**

**a. Anticipated Impacts:**

**Due to Haul Road/ Access Road:**

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**Environmental Management Plan**

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- ❖ Plying of tractor trolleys from public road to river sand collection points needs access roads.
- ❖ Majority of such access roads are the same existing roads/tracks being used by pedestrians/cart owners. Movement of heavy vehicles sometimes causes problems to cattle, agriculture land, and human habitations due to dust, noise and movement of public.
- ❖ These environmental problems are felt more as the area is rural in nature.

**Due to Mining process:**

- ❖ Air pollution is likely to be caused at various stages of sand mining operations such as excavation, loading & transportation of material.
- ❖ Most of the dust will be generated from loading& transportation. This dust becomes air borne and gets carried away to surrounding areas.
- ❖ The impact on air is mainly localized in nature as the dust particles are not carried to longer distances and the effect is felt within the core zone of the project involving active Sand mining operations.

**b. Mitigation Measures:**

**Mitigation of Impacts on Access Roads:**

- ❖ Movement of the vehicles on the road will be increased; however, unmetalled road in the mining area will be sprinkled with water at regular intervals.
- ❖ In addition to prevent spillage by tractor trolleys over loading should be controlled along with speed limit (1Brass /tractor trolley).
- ❖ Maintenance of haul road will be done on regular basis.

**c. For Fugitive Dust Emission:**

- ❖ To avoid fugitive dust emissions at the time of excavation, regular sprinkling of water will be done on regular basis.
- ❖ Sand is transported to the sites by road through tractor trolleys. The sand carrying vehicles shall be covered by tarpaulin sheets.
- ❖ The Green Belt development will be prepared along the haul roads, which will act as a pollution sink.
- ❖ To minimize the vehicular pollution from the sand transporting vehicles, the following conditions will insist to permit the vehicles of the transporters.
- ❖ The vehicles should be (Bharat-IV stage) compliant and should have pollution control certificate (PUC) issued by appropriate authorities.
- ❖ Regular maintenance of transport vehicles and monitoring of vehicular emission levels at periodical intervals.

**5. Noise:**

**a. Anticipated Impacts:**

Noise environment in this project will be affected only by the equipment at the site and vehicular transportation. Since slight increase in noise levels can be expected.

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***Environmental Management Plan***

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**b. Mitigation Measures:**

- ❖ Minimum use of Horns at the village area.
- ❖ Timely maintenance of vehicles and their silencers to minimize vibration and Sound.
- ❖ Phasing out of old and worn-out tractor trolleys.
- ❖ Provision of green belts along the road networks.
- ❖ Care will be taken to produce minimum sound during sand loading.
- ❖ Use of Backhoe and ear plugs may be provided to protect the labors working at the site.

**6. Socio-Economic Environment**

This project operation will provide livelihood to the poorest section of the society.

**Anticipated Impacts and Evaluation:**

- ❖ The project activities shall not have any adverse impacts on any of the common property resources of the village communities, as the sand mine lease area is not being used for any purpose by any section of the society in this region.
- ❖ There is no R & R involvement in this project.
- ❖ There is no land acquisition in this project.
- ❖ The results of the field survey conducted to understand the knowledge and perception of the people living around the project area gives a clear idea about the need for the project.
- ❖ A major portion of the houses in the study area are semi- pucca type structures.
- ❖ The water source to these areas is from the municipal connection and private bore wells and wells. The awareness level regarding the proposed mining activity is very high. The proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes.

**a. Social and Demographic Profile:**

The workers are from local villages. These people have been provided all welfare from a lessee like medical benefits, insurance, fees for children's education etc. They have some land and cattle for their daily earnings. Additional income earned from the Sand Mining work will improve their living standard. The group of quarries in and around will help to have infrastructure facilities like roads, schools, shops etc. This will improve their social life.

**b. Occupational Health and Safety:**

This is Riverbed Sand Mine. So, the mining activities are comparatively less because the production is not on large scale. Workers do not come across any extreme condition like excessive heat, moisture etc. Workers working around it may come across this dusty environment, which can be managed by providing face mask.

**c. Human Settlement:**

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**Environmental Management Plan**

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There are no houses in and around lease area. All the due precautions will be taken during mining. Transport of finished products is through the villages. There will be psychological impact of the traffic on the local people. However, the intensity of traffic is less.

**d. Health and Hygiene:**

In general, the health of villagers is moderately good. In the rainy season, the atmospheric condition is unhygienic due to lack of proper drainage and sanitation in the village habitation. Villagers are working in agricultural fields and work as laborers.

**e. Education:**

- a. Mostly education is up to middle standard. Economic condition is in general moderate. So, after this project the standard of education will be increase.

**f. Socio Economic Benefits Arising Out of Mining:**

- a. Generation of employment in the rural area.
- b. Improvement in the living standards of the rural people.
- c. Creating of infrastructural facilities like roads, electricity, shops, school etc.
- d. Helping to improve literacy in the area Exploiting natural mineral so generation of revenue.
- e. Helping to sustain construction activity.
- f. Improving the greenery of the area, this is otherwise poor.

**g. Liquid Effluent:**

Not applicable because small mine and impacts are negligible.

**h. Solid Waste:**

Not applicable because small mine and impacts are negligible.

**6. Biological Environment**

**Anticipated Impacts:**

- ❖ **Aquatic environment-** Proposed mining of the dry bed of the river, so no possibility of disturbance of aquatic life.
- ❖ **Flora and Fauna-** The mining activity will have insignificant effect on the existing flora and fauna. The project area is surrounded with agricultural land. It was found that the sand mining activity will not have any significant impact on the biological environment of the region.

**Mitigation Measures:**

- ❖ Improvement in riverbank stability.
- ❖ Large woody debris in the riparian zone will be left undisturbed or replaced when moved and not be burnt.
- ❖ Vegetative debris will not be stored within the mine lease area.
- ❖ Operation and storage of heavy vehicles within riparian habitat will be restricted.

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- ❖ Covering of loaded vehicles to reduce dust emission, which may harm surrounding agricultural crops and other plant species conservation of biological diversity of plants, birds, and animals.
- ❖ Greenbelt Development and Bio-Diversity Preservation Plantation activities will be carried out at the bank of the river and along the haul roads. This activity will help for maintaining ecology and environment of the area.

**5 Project Benefits**

The proposed expansion project will lead to the following benefits:

- Sand is available for Building and Construction work and by regular removal of sand there is no possibility of flood.
- This project will contribute additional revenue to the state Exchequer in the form of revenue.
- The project will result in the employment opportunities to the unskilled/skilled local people.

Thereby, the quality of life of the employed people will increase.

**6 Sand Ghat Closure Plan**

S. No	Head	Area put on. use at start of plan [in Ha]	Additional Requirement during Plan period [in Ha]	Total [in Ha]	Area considered as	Net consider for calculation
1	Area under mining / pit	-	2.47	2.47	2.47	2.47
2	Area under dump	NIL	---	---	---	---
3	Infrastructure Workshop Administrative Building etc.	--	--	--	--	--
4	Roads	--	--	--	--	--
5	Mineral reject	--	--	--	--	--
6	Green Belt Plantation /Soil dump	--	--	--	--	--
7	Tailing Dam /pond	--	--	--	--	--
8	Effluent Treatment Plant	--	--	--	--	--
9	Mineral storage	--	--	--	--	--
10	Township area	--	--	--	--	--
11	Other to specify	--	--	--	--	--
<b>GRAND TOTAL</b>			2.47	2.47	2.47	2.47

**Hanmantkhede Sim Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Hanmantkhede Sim Part-1 Village, Tehsil Erandol, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

- ❖ Mining will be avoided during monsoon and floods; this will allow the sand deposit to replenish.
- ❖ Gabion structure will be constructed for the sand to replenish during monsoon season.

**7 Planning brief:**

The proposed project is opencast manual sand mining activity.

Supply demand ratio:

Information required on demand and supply of district (2023-24)			
S.No.	Name of District	Total sand Demand of District in Brass	Total Sand Available in district in Brass
1	Jalgaon	191380	104531

**8 Compliance of earlier Environmental Clearance**

Hanmantkhede Sim Part-1 sand spot of Hanmantkhede Sim Part-1 village of Erandol tehsil has got environmental clearance in the year 2016-2017 but the sand ghat didn't get a response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot.

**9 Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020.**

- ❖ District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- ❖ Appropriate feedback and its redressal mechanism shall also be made operational.
- ❖ Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- ❖ Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- ❖ The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- ❖ Printed on Indian Bank Association (IBA) Approved
- ❖ Magnetic Ink Character Recognition Code (MICR) paper
- ❖ Unique Barcode



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**Environmental Management Plan**

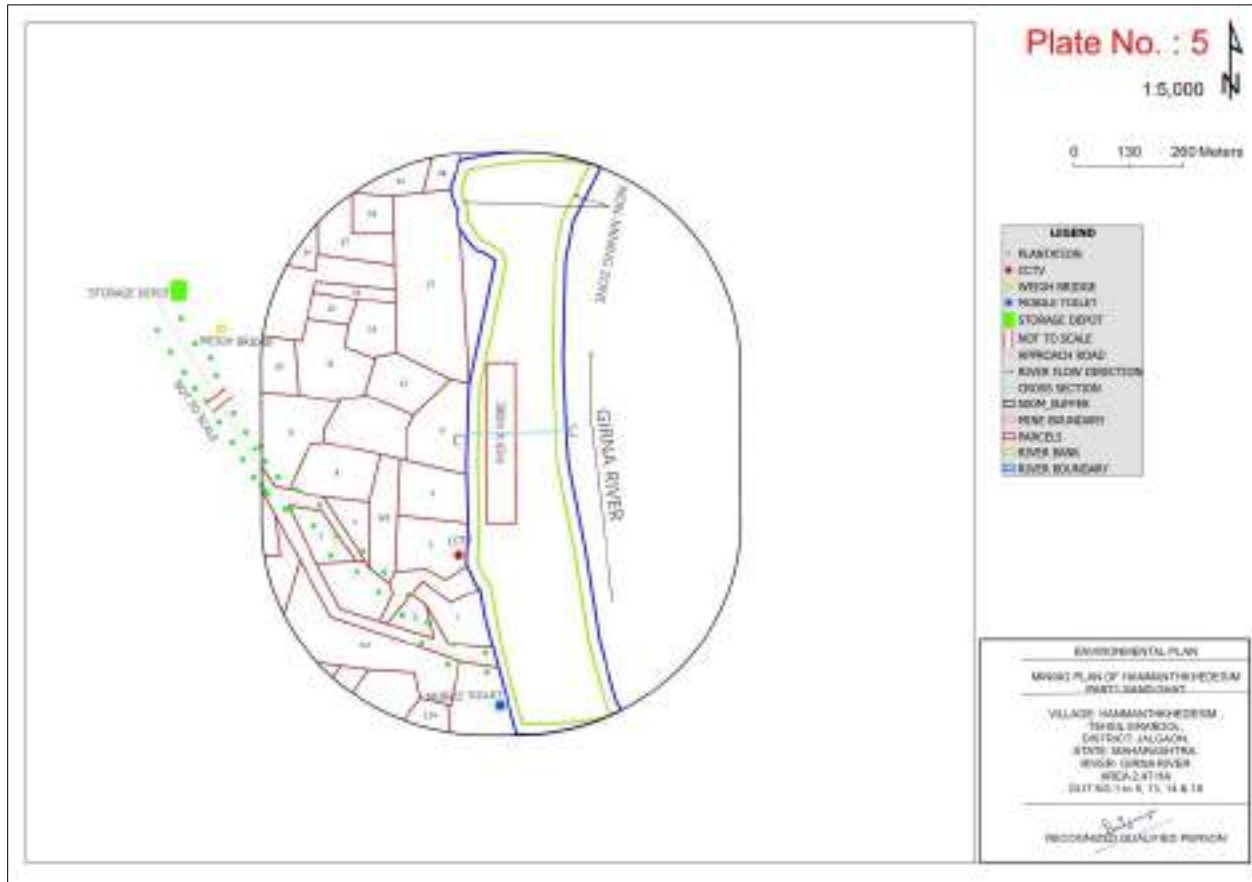
- ❖ Unique Quick Response Code (QR)
- ❖ Fugitive Ink Background
- ❖ Invisible Ink Mark
- ❖ Void Pantograph
- ❖ Watermark
- ❖ GPS BASED VEHICLE TRACKING SYSTEM
- ❖ CCTV Camera

Cluster certificate with reference to the EIA Notification 2006 amended from time to time with specific remarks on the cluster formation in the periphery of the proposed sand ghat along with area map showing distances between adjoining sand mine areas.

Hanmantkhede Sim Part-1 does not form a cluster.

**10 Layout of proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc.**

Proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc. layout is given below:



**Hanmantkhede Sim Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Hanmantkhede Sim Part-1 Village, Tehsil Erandol, Jalgaon District, Maharashtra.**

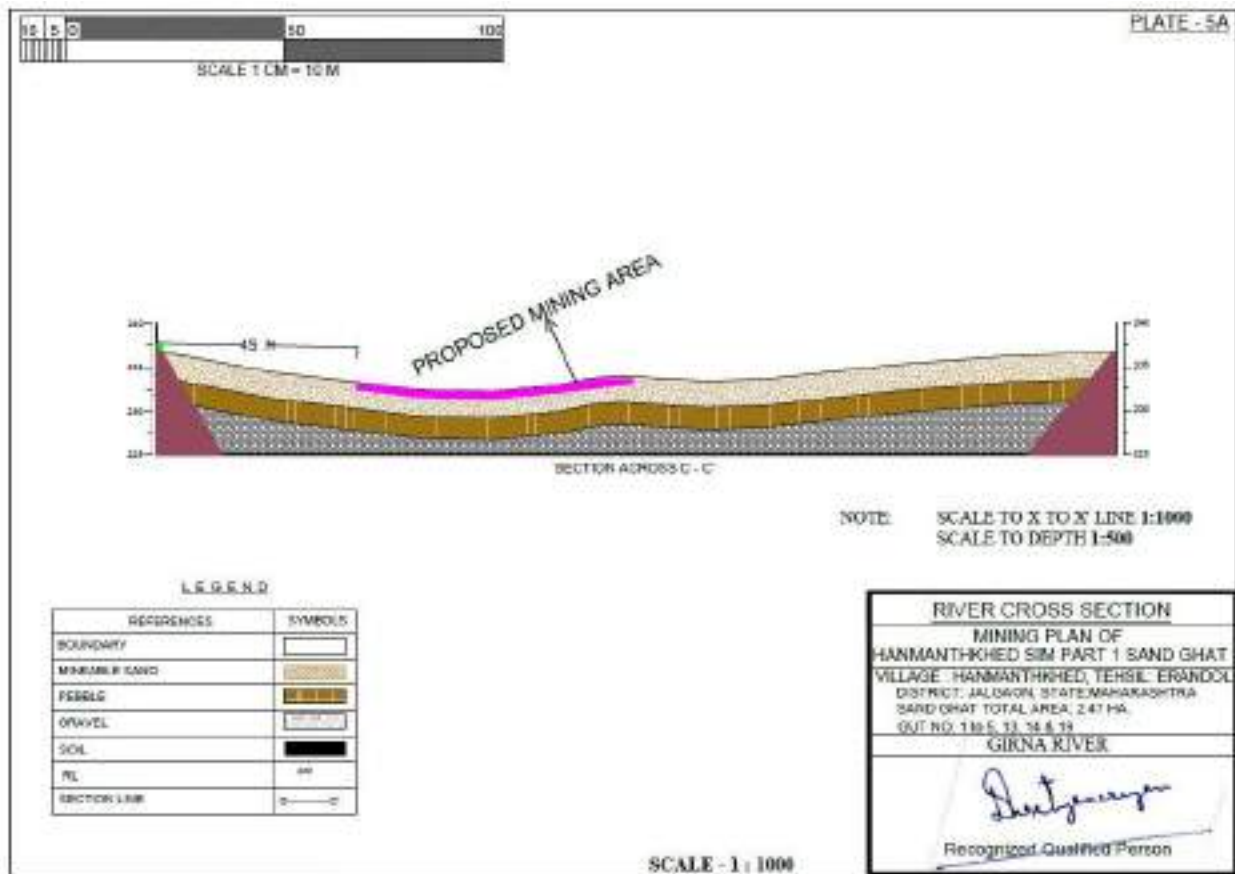
**Environmental Management Plan**

**11. Proposed approach road for transport of mined sand from sand ghat to the storage area and consent of storage area from the concerned landowners is an after-auction activity to use their land as approach road.**

The proposed approach road length is at 665m and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the river bank. Consent of road submitted by Erandol Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from land owner.

**12. Cross -Section of riverbed showing distance of proposed sand mine area from the riverbank and other details as prescribed in the Enforcement & Monitoring Guidelines for sand mining published in January 2020 by MoEF&CC.**

Cross section of riverbed is shown below:



**13. Details of District Level Task Force committee meetings and status of compliance of its recommendations if any.**

District Level Task Force Committee Meeting details is enclosed.



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***Environmental Management Plan***

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**DANDY-BOLTON EQUATION**

**1. For Runoff Less Than 2 Inches**

$$S = 1280 * (Q)^{0.46} * (16 - 0.26 \log(A)) * F$$

**2. For Runoff More Than 2 Inches**

$$S = 1958 * (Q)^{(e - 0.055 * Q)} * (13 - 0.26 \log(A))$$

Where

S = sediment yield of stream (t/yr./km<sup>2</sup>),

Q = average annual runoff (m<sup>3</sup>),

A = net drainage area in sq. Mile

The sediment yield of Girna river at Girana dam station is 4.612\*10<sup>20</sup> tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation.

**(Source: State Irrigation Department)**

**Conclusion:**

As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**16 PP to submit details of proposed plantation plan along with its location and requisite permission to be obtained from the Competent Authority.**

Plantation details are presented below:

<b>Location of greenbelt</b>	Both sides of approach road, On the riverbanks of both sides of the sand spot & nearby open areas. Haul Road outside riverbed.
<b>No. of plants to be planted</b>	856
<b>Spacing of plants</b>	4 m grid interval
<b>Species selected</b>	Native species

Tree species recommended for Plantation:

Botanical name	Local name	Importance
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**Hanmantkhede Sim Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Hanmantkhede Sim Part-1 Village, Tehsil Erandol, Jalgaon District, Maharashtra.**

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Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

**17 BUDGET FOR CORPORATE ENVIRONMENT RESPONSIBILITY (CER)**

About 2% fund of the project cost is allocated for Corporate Environment Responsibility (CER) activities as presented in below Table:

SNo.	Budget Allocated	Budget (In INR)
1	Installation of one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	25000
3	Needed Repairing work with consultation of Grampanchayat	25000
4	Community Infrastructure Development(Steel fencing to ZP school with consultation of Grampanchayat)	70000
Total		2,00,000

**18 Environmental Management Plan (EMP)**

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR **544850** and recurring cost provision of about INR **295850** has been kept in the project cost towards the environmental protection, control and mitigation measures and implementation of the EMP, this cost is born by bidder / lease holder. The budgetary cost estimate for the EMP is given in Table.

**Table 6: Environmental Budget**

Hanmantkhede Sim			EMP Budget		
SNo.	Component	Description	Capital cost Rs.	Recurring Cost Rs.	Total Cost in Rs
1	Environmental Monitoring	Monitoring for Air, water, noise & Groundwater	-	150000	150000

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	programme				
2	Air Pollution Control	Water sprinkling during mining activities	-	33250	33250
3	Approach Road Maintenance		-	26600	26600
4	Green Belt Plantation	Along the River Bank	47500	-	47500
		Along the Approach Road	166500	-	166500
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	5000	-	5000
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	45000	45000
7	Security	Display Boards and other security measures	10000	-	10000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health check-up (1000Rs./ Employee)	-	41000	41000
9	Tarpaulin Cover (5000 INR per one Cover)		20000	-	20000
<b>Total</b>			<b>249000</b>	<b>295850</b>	<b>544850</b>

**19 Public Consultation Report**

Erandol					
S.No	Villager Name/Village,Taluka	Type of Person (Villager/Government Official)	Query raised by the Villager/Official	Response from the Proponent	Action Plan

**20 Summary and Conclusion**

The environmental status of the project site and study area of 10 km radius is delineated with respect to air, noise, water, land, biological and socio-economic environment the different project activities in the construction and operation phases are identified. To identify the impacts, the interaction between the project activities and different components of the environment are classified phase wise. A summary of the identified impacts is given in the following paragraphs.

***Hanmantkhede Sim Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Hanmantkhede Sim Part-1 Village, Tehsil Erandol, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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During the operational phase, transportation of sand could cause a temporary disturbance to local environment which will be prevented with the proposed mitigation measures proposed in Point no. 4.

Proposed project will not have any major significant negative impacts. The minor impacts arising out during Excavation and Transportation phases can be mitigated with the help of the proposed Environmental Management Plan.

In general, Sand excavation from Hanmantkhede Sim Part-1 Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

**Hanmantkhede Sim Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Hanmantkhede Sim Part-1 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**PRE-FEASIBILITY REPORT**

The Hanmantkhede Sim Part-1 . Sand Spot is situated at Village Hanmantkhede Sim , Taluka Erandol, District- Jalgaon. Sand Spot is 2.47HA of area in Gut No 1 to 5, 13, 14 & 19 of Hanmantkhede Sim village of Erandol Tehsil, Jalgaon district. Detail of the project is summarised below

- District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- District Collector Jalgaon appointed M/s Integrated Precision Systems & Services Pvt. Ltd., for preparation of Mining Plan and grant of environmental clearance.
- Applicant proposed to auction the said Sand Spot over an area of 2.47HA area and identified for preparation of mining plan and for grant of Environmental Clearance.
- Mining Plans are prepared by Recognized Qualified Person and approved by Directorate of Geology & Mining Govt. of Maharashtra.
- About 4363 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Girna river bank.

**1. Physiography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the riverbanks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 238 to 240 from MSL i.e 2m. The Highest contour value is 240 and lower is 238. The flow direction of Girna river is towards SW.

**2. Local Geology**

The local geology is Sand of various size up to depth of 2.5- 3meter.

**3. Details of Exploration**

There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the river bed.



**Hanmantkhede Sim Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Hanmantkhede Sim Part-1 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

Mining - The mining will be continued with present method of open cast mining by cutting slice of 0.5m of Sand along topo-relief, by advancing from SW to NE direction as per allotted area by auction. The production can be at the rate of 12350 Cu.m or 4363 brass i.e. 1 year from the date of mining plan approval, the size of pit at the end will be 2.47HA.

**Introduction of the project/ background information**

The Hanmantkhede Sim Part-1 Sand Spot has been kept for Auction which is situated at Village Hanmantkhede Sim, Taluka Erandol , and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

**i) Brief description of project**

The Sand Spot has sufficient Reserve of Sand to work at 12350 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m area of Sand by advancing from North to South direction as per allotted Sand Spot area and handling of material with the help of labourer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**ii) Need for the project**

The Sand or Sand Spot under reference is aimed at exploring Sand as ROM in various sizes i.e. fine to Coarse grain which is Transported to consumer site in outside Sand Spot area, for the infrastructure development i.e. Construction activity to produce Concrete for putting in the floor, roof- slabs, Column, Pillars, Bridges & Dam construction.

**3. Project Description**

This mining project is an independent project and not an interlinked project.

**i) Location**

Hanmantkhede Sim is a small Village in Erandol Taluka in Jalgaon District of Maharashtra State, India. It comes under Hanmantkhede Sim Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 29KM towards N from District headquarters Jalgaon. The Sand Ghat is 317 KM from State capital Mumbai.

Area covered in SOI Toposheet No- 46P/5 and 46P/6

The boundary pillars of Sand Spot area are given below with GPS values.

<b>Boundary Points Hanmantkhede Sim Part-1</b>	<b>LATITUDE</b>	<b>LONGITUDE</b>
--	-----------------	------------------

**Hanmantkhede Sim Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Hanmantkhede Sim Part-1 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

BP1	20°48'4.26"N	75°23'54.80"E
BP2	20°47'51.92"N	75°23'54.85"E
BP3	20°47'51.91"N	75°23'52.60"E
BP4	20°48'4.25"N	75°23'52.55"E

**ii) Alternate Sites**

No alternate site is proposed.

**iii) Magnitude of Operation**

Proposed period for mining of sand will be decided by the office of district collectorate 12350 cu.m. will be excavated during the period.

**iv) Project description-mining details**

The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 380m L X 65m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable. The Sand Spot has sufficient Reserve of Sand to work at 12350 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m slice of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**v) Raw material, marketing & transport of ore**

The proposed sand spot will be auctioned, and successful bidder will be responsible for carrying out mining operations as per environmental terms and conditions, approved mining method as per approved mining plan and other terms and conditions. The loading of Sand generated to the tractor/tipper/dumpers will be done by loaders & material transported to the Dealer site.

**vi) Resource optimization, recycle, reuse**

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

**vii) Water & energy requirement**

The major water requirement in the lease area is for dust suppression and for drinking use. The total water requirement is estimated as 4.4 KLD the required water for dust suppression can be arranged through tankers from nearby village and drinking water will be provided in earthen pots for labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

**Hanmantkhede Sim Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Hanmantkhede Sim Part-1 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**viii) Quantity of waste & scheme for management**

There will not be any waste generation within the lease area.

**ix) Schematic Representations**

It is a proposal of opencast manual sand mining from river bed. Mining plan is approved by the competent authority.

**4. Site Analysis**

**i) Connectivity**

Hanmantkhede Sim is a small Village in Erandol Taluka in Jalgaon District of Maharashtra State, India. The sand spot area is connected to approach road at a distance of 665 m in South direction. Paradhe Railway Station is present at a distance of 1km.

**ii) Land Use, form & Ownership**

The ultimate land use pattern for the lease area of 2.47HA. will be consisting of

- |                                    |   |          |
|------------------------------------|---|----------|
| 1. Mining Area                     | : | 2.47HA.  |
| 2. Construction of Temporary Roads | : | 0.00 ha. |
| 3. Total                           | : | 2.47HA.  |

At present ownership of this sand spot area is in the hand of Govt. of Maharashtra, after approval of mining plan and EC quarry area will be transfer to bidder after auction.

**iii) Geology**

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

**Existing land use pattern**

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

**Social-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- A. The mining operations will provide direct & indirect employment village people.
- B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- C. Local work force will be given first preference for employment.
- D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area).

**Hanmantkhede Sim Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Hanmantkhede Sim Part-1 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Planning brief:**

The proposed project is opencast manual sand mining activity.

**Supply demand ratio:**

<b>Information required on demand and supply of district (2023-24)</b>			
<b>S.No.</b>	<b>Name of District</b>	<b>Total sand Demand of District in Brass</b>	<b>Total Sand Available of district in Brass</b>
1	Jalgaon	191380	104531

**Replenishment:**

- Area of deposition and erosion was calculated for each cross-section after giving due regard to stability & safety of active channel banks & other features of importance.
- DGPS and other survey tools have been used to define topography, contours and offsets of lease area.
- Contour & elevation benchmarks are provided with the baseline data for assessing pre and post-study period scenario.
- Physical benchmarks are fixed at intervals (1 in 30 m) & Reduced Levels (RL) are validated from a nearby standard RL.
- These RL are engraved on a steel plate (Bench Plate) & are fixed & placed at locations which are free from any damages & are available in pre and post-study period.
- Bench plates are available for use during the mining period as reference for all mining activity.
- Baseline data on elevation status for a grid of 10 m x 10 m is taken to ensure the accuracy in the assessment.
- It was made sure that two consecutive cross-sections in longitudinal and lateral direction is not be more than 10-meter distance apart.
- Changes have been observed in the elevation in pre and post scenario at each node and were depicted in graphical forms with an appropriate scale for estimating the area of deposition & erosion.
- Elevation level was placed in reference to the nearest bench-plates established for the purpose.
- The levels (MSL & RL) of corner point of each grid were identified and safety barriers (Non-Mining) are demarcated as restricted in consensus with Mineral Concession Rules of respective State, and the provision mentioned in this Sustainable Sand Mining Management Guidelines.
- A clear identification was highlighted between grids under mineable and grids under the non-mineable area. These baseline data (pre and post) was subjected to stimulation with the help of data mine software to derive at the replenishment area and corresponding volume and estimated weight.



**Hanmantkhede Sim Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Hanmantkhede Sim Part-1 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**2. For Runoff More Than 2 Inches**

$$S = 1958(Q)^{0.055} (1.43 - 0.26 \log(A))$$

Where

S= sediment yield of stream (t/yr./km<sup>2</sup>),

Q= average annual runoff (m<sup>3</sup>),

A= net drainage area in sq. mile

- The sediment yield of Girna river at Girana dam station is 4.612\*10<sup>20</sup> tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation..

**(Source: State Irrigation Department)**

**Conclusion:**

As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020**

- District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- Appropriate feedback and its redressal mechanism shall also be made operational.
- Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- Printed on Indian Bank Association (IBA) Approved
- Magnetic Ink Character Recognition Code (MICR) paper
- Unique Barcode
- Unique Quick Response Code (QR)
- Fugitive Ink Background

**Hanmantkhede Sim Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Hanmantkhede Sim Part-1 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

- Invisible Ink Mark
- Void Pantograph
- Watermark
- CCTV at mine lease site
- GPS Based Vehicle Tracking System

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided outside Sand Spot area.

**Compliance of earlier Environmental Clearance**

- ❖ Hingone Sim Pra.Jalod sand spot of Hingone Sim Pra.Jalod village of Amalner tehsil has got environmental clearance in the year 2021-2022 but the sand ghat didn't get a response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot.

**7. Proposed Infrastructure**

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided in outside Sand Spot area.

**8. R&R Plan**

R&R is not involved.

**9. Project schedule**

Period of mining for the proposed sand spot will be decided by the Office of District Collectorate.

**10. Analysis of Proposal**

Description of the project included in items 1-10 above indicates the following:

1. It is proposed for opencast manual river sand mining.
2. Opencast mining without hampering the present environmental quality of the area.
3. Income to local people is uncertain & initiation of mining will ensure regular income to local people.

**11. Costing**

Costing parameters will be decided by the District Authorities.

**12. Compliance to Environment Clearance**

Whether there are any serious violation of safety rules and regulation which may jeopardize human health and safety. If so, give details of violations and state the steps proposed to be taken with the time scheduled to rectify the violations:

No, there are not any serious violation of safety rules and regulation, which may jeopardize human health and safety. The applicant has given a commitment in this effect and undertaking also given to follow and implement, as specified in the mining plan. The applicant is undertake to abide and implement any special conditions imposed by various authorities and also to complete formalities under provision of the Mines & Mineral (Development & Regulation) Act, 1957 and the Bombay Minor Mineral rules, the Mineral

***Hanmantkhede Sim Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Hanmantkhede Sim Part-1 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.***

Conservation and Development Rules, 1988 as amended, the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule 2013, MoEF&CC Notification S.O. 141 (E) dated 15th January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, Sustainable Sand Mining Management Guidelines 2019, Sand Mining Policy 2020

**13. Any Other Information:**

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road -- 11) Railway -- 12) Tailing Pond -- 13) Effluent Treatment Plant - - 14) Mineral separation plant -- 15) Township Area -- 16) Others to specify -- 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule-2013, MoEF&CC Notification S.O. 141 (E) dated 15<sup>th</sup> January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.05.1994 and 04.09.2006.



**Risk Assessment for Hanmantkhede Sim Part-1 Sand Spot**

**1. Introduction**

A main principle of risk assessment is that it should take place before any changes are made. Risks should be assessed and control measures are put into action before new work is introduced or systems are changed. The process should influence budgets and allocation of resources, rather than being an afterthought when the decisions have already been made.

The risk management process is continuous, with well-defined steps that support better decision making by contributing greater insight into risks and their impacts. Risks from all sources are identified and once they pass the materiality threshold, a formal process begins in which causal factors and consequences are identified and the correlation with other risks and the current risk mitigating strategy is reviewed. One of the challenges is to ensure that mitigating strategies are geared to deliver reliable and timely risk information to support better decision-making.



The mining operations at HANMANTKHEDE SIM PART-1 SAND SPOT are subjected to the risks and hazards normally encountered in open-cast mining operations. These risks include operational risks relating to

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**Hanmantkhede Sim Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Hanmantkhede Sim Part-1 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Risk Assessment**

**Page: 2 of 2**

materials handling, accidents, removing material from quarry area. Mining processes also rely on key inputs, for example fuel. Appropriate insurance can provide protection from some, but not all, the costs that may arise from unforeseen events. If any of these risks should materialize, such an event could result in serious harm to employees and contractors, delays in production, increased production costs and possible increase in liabilities.

Disruption to the supply of key inputs, or changes in their pricing, may have a material and adverse impact on HANMANTKHEDE SIM PART-1 SAND SPOT asset values, costs, earnings and cash flows. Failure to meet production target results in increased unit costs. The impact is more pronounced at operations with a high level of fixed costs. Mitigation strategies include efforts to secure strategic supplies at competitive prices, energy reduction, and application of group water management guidelines, adoption of lean production principles and practices and business improvement initiatives to reduce unit costs.

There are certain aspects which should be taken care of, in a quarrying plan with accordance of risk management.

<b>Components</b>	<b>Risk Involved</b>
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
Fire	Only trucks and tractors will make use of diesel for transportation. Diesel is not so highly inflammable but accidental fires can take place.
Road Accidents	Vehicles are used for transporting the material from quarry area to the buyer's location. Due to some improper maintenance of the vehicle a road accident can occur leading to fatal results.

To minimize the risk, certain measures can be taken like implying safety rules, facilities of basic first aid near the site and having training for the workers about personal safety.

Disaster Management Plan is envisaged with a goal to prevent hazards and accidents at work places by careful design, operation, and maintenance of equipment's. All safety precautions and provisions of Metalliferous Mines Regulation-1961 will be strictly followed. Suitable control measures will be adopted to take care of hazards/disasters that may occur during mining operation.

- No mining activities during rainy days or just after heavy rain.
- Fire fighting, first aid provisions & safety appliances will be made available to the staff and their use regularly checked
- Regular maintenance of all haulage roads & mining machinery as per manufacturer's guidelines will be done

**APPENDIX VIII  
(See paragraph 6)**

**FORM 1 M**

**APPLICATION FOR MINING OF MINOR MINERALS UNDER CATEGORY 'B2' FOR LESS THAN AND EQUAL TO FIVE HECTARE**

**(I) Basic Information**

(i) Name of the Mining Lease site: Hingone Sim Pra Jalod Sand Spot

(ii) Location / site (GPS Co-ordinates):

<b>Boundary Points Hingone Sim Pra.Jalod</b>	<b>Latitude</b>	<b>Longitude</b>
BP1	21°10'25.92"N	75° 7'52.48"E
BP2	21°10'25.82"N	75° 7'35.14"E
BP3	21°10'28.10"N	75° 7'35.12"E
BP4	21°10'28.20"N	75° 7'52.46"E

(iii) Size of the Mining Lease (Hectare): 3.5HA

(vi) Capacity of Mining Lease (TPA): 6183 Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 37.10 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, Maharashtra

**(II) Environmental Sensitivity**

<b>S. No.</b>	<b>Areas</b>	<b>Distance in Kilometer/Details</b>
1	Distance of project site from nearest rail or road bridge over the concerned River, Rivulet, Nallah etc.	Bridge on SH-1, 1.7Km, SE
2	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road Any Other Road Electric transmission line pole or tower Canal or check dam or reservoirs or lake or	Dharangaon Railway Station, 16Km, S NH-53, 15.3Km, S SH-1, 2Km, W 1.4Km SW ET, 0.50Km, S Padalsare Dam, 13.8Km, W

**Hingone Sim Pra.Jalod sand spot over an extent of 3.5Ha At Tapi River Bed Gut No.6 & 7, Hingone Sim Pra.Jalod Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

**Form 1M**

**Page: 2 of 2**

	ponds In-take for drinking water pump house Intake for Irrigation canal pumps	Nil Nil
3	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil
4	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Water bodies: this is the case of river sand mining in Tapi River bed; RF, 17.2Km, S
5	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil
6	Inland, coastal, marine or underground waters	Tapi River bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	NH-53, 15.3Km, S SH-1, 2Km, W
9	Defense installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Hingone Sim Pra.jalod, 576m, SW
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	ZP School Jalod, 1.80Km, SE Rural Hospital Jalod, 2Km, SE
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Tapi River Bed ( this is the case of river sand mining) RF, 17.2Km, S
13	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil
14	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse	The mine lease area falls in Seismic Zone III (Moderate), according to the Indian Standard Seismic Zoning Map.

**Hingone Sim Pra.Jalod sand spot over an extent of 3.5Ha At Tapi River Bed Gut No.6 & 7, Hingone Sim Pra.Jalod Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

**Form 1M**

**Page: 3 of 2**

	climatic conditions)	
15	Is proposed mining site located over or near fissure / fracture for ground water recharge	No
16	Whether the proposal involves approval or clearance under the following Regulations or Acts, namely:- (a) The Forest (Conservation) Act, 1980; (b) The Wildlife (Protection) Act, 1972; (c) The Coastal Regulation Zone Notification, 2011. If yes, details of the same and their status to be given.	No
17	Forest land involved (hectares)	Nil
18	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Orders or directions of the Court, if any, and its relevance with the proposed project.	Nil

***Hingone Sim Pra.Jalod sand spot over an extent of 3.5Ha At Tapi River Bed Gut No.6 & 7, Hingone Sim Pra.Jalod Village, Tehsil- Amalner, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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## **ENVIRONMENTAL MANAGEMENT PLAN**

### **1 Introduction**

Ministry of Environment, Forest & Climate Change (MoEF&CC) Notification 2006 and Sustainable Sand Mining Management Guidelines 2016 and as per provision in Mines and Minerals (Development and Regulation) Act 1957 Schedule 60 section 15, Govt Of Maharashtra makes a Minor Mineral Extraction Rules 2013 to extract all the minor mineral in scientific way so that there is no adverse impact on Environment and Climate. To extract every minor mineral from any land (either Government or Private) there is provision of mining plan which is approved by competent authority; For long term leased minor mineral (5 – 10 years period) and Sand excavation from river bed, Senior Deputy Director of Directorate of Geology and Mining is a Competent authority, for short term Temporary permits which is valid for one year, Committee headed by Hon. Collector is Final authority to Approved the District Mining Plan.

As per Minor Mineral Extraction Rules 2013 Rules 70, Disposal of sand from River bed, Nallah and creeks by way of public auction, in this regards Govt resolution Gaukhni -10/0615/case No. 289/kha dated 3rd January 2018 is applicable in entire state. As per Enforcement & Monitoring Guidelines for Sand Mining 2020 Sustainable sand mining management guidelines 2016, Standard Environment condition for sand mining and sustainable mining practices, district level survey report should be prepared and area suitable for mining and area prohibited for mining be identified.

### **2 Project Description**

Hingone Sim Pra.Jalod is a small Village in Amalner Taluka in Jalgaon District of Maharashtra State, India. It comes under Hingone Sim Pra.Jalod Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 49KM towards SE from District headquarters Jalgaon. The Sand Ghat is 330KM from State capital Mumbai.

The sand spot area is connected to approach road at a distance of 555m in South direction. Jalgaon Railway Station is present at a distance of 10km.

Area covered in SOI Toposheet No 46P/4.

The GPS reading of boundary point are given below:

**Hingone Sim Pra.Jalod sand spot over an extent of 3.5Ha At Tapi River Bed Gut No.6 & 7, Hingone Sim Pra.Jalod Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

**Table 1: Salient Features of the Project**

Items	Details															
Location	Village- Hingone Sim Pra.Jalod , Tehsil- Amalner District- Jalgaon, Maharashtra.															
Latitude and Longitude	<table border="1"> <thead> <tr> <th>Boundary Points Hingone Sim Pra.Jalod</th> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td>BP1</td> <td>21°10'25.92"N</td> <td>75° 7'52.48"E</td> </tr> <tr> <td>BP2</td> <td>21°10'25.82"N</td> <td>75° 7'35.14"E</td> </tr> <tr> <td>BP3</td> <td>21°10'28.10"N</td> <td>75° 7'35.12"E</td> </tr> <tr> <td>BP4</td> <td>21°10'28.20"N</td> <td>75° 7'52.46"E</td> </tr> </tbody> </table>	Boundary Points Hingone Sim Pra.Jalod	Latitude	Longitude	BP1	21°10'25.92"N	75° 7'52.48"E	BP2	21°10'25.82"N	75° 7'35.14"E	BP3	21°10'28.10"N	75° 7'35.12"E	BP4	21°10'28.20"N	75° 7'52.46"E
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BP3	21°10'28.10"N	75° 7'35.12"E														
BP4	21°10'28.20"N	75° 7'52.46"E														
Sand spot area (In Ha)	3.5															
Proposed production capacity (In Brass)	6183															
Manpower Requirement (considering 3-month period)	51 labours +2 mate + 2Supervisor=55manpower															
Infrastructure Requirement (As per Govt Resolution 3rd January 2018)	1. Room / Hut for Official records 2. Electricity / Battery for Running CCTV on 24X 7 daily. 3. One Computer / Android base Mobile for the online generation of Invoice number.															
Water requirement & source	8.2 KLD – Tankers from nearby village.															
Project cost INR (Lakh)	37.10 Lakhs															

***Hingone Sim Pra.Jalod sand spot over an extent of 3.5Ha At Tapi River Bed Gut No.6 & 7, Hingone Sim Pra.Jalod Village, Tehsil- Amalner, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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**3 Baseline Environmental Status**

**i. Topography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Amalner, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Amalner, Jalgaon, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Amalner, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 147 to 150 from MSL i.e 3m. The Highest contour value is 150 and lower is 147. The flow direction of TAPI river is towards SW

**ii. Hydrology**



***Hingone Sim Pra.Jalod sand spot over an extent of 3.5Ha At Tapi River Bed Gut No.6 & 7, Hingone Sim Pra.Jalod Village, Tehsil- Amalner, Jalgaon District, Maharashtra.***

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The will be no change in water table during mining operation, as the depth of mining shall be restricted to 0.5m water level, which is less likely to affect surface level or ground water table. There is no proposal of any stream modification/diversion due to this mining activity hence there will be no impact on flow of water.

**iii. Soil Environment**

The area is not having any top soil or fertile soil. The depth of mining shall be restricted to 0.5m. There is no major impact on soil of the study area due to mining activities

**iv. Land Use Land Cover**

The project area does not consist of any forest land. It does not consist of any human habitations. Any change in scope of mining as per approved mining plan can lead to bank erosion /cutting and thereby river channel shifting degradation of land, causing loss of properties and degradation of surrounding landscape.

**v. Water Environment**

There will not be any waste water discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 0.5m only so there will not be any intersection with ground water table. It is observed from the dug well in the adjacent plain area and in the nearby villages that the ground water table varies depending upon seasonal variations. The depth to water levels in the district ranges from 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 0.5m that too within the river course and the total mining operation will be achieved through manual means, there will be no effect on ground water table. All the stipulations of MoEF for sand mining and guidelines as per the Maharashtra Minor Mineral Extraction [Development and Regulation] Rules, 2013 of Section 15 of MMDR Act 1957 [67 of 1957] will be followed. Hence, impact on water regime due to the proposed sand mining is not anticipated.

1. Precautionary measures will be initiated for closing the operation and shifting the men and transport vehicles prior to onset of monsoon.
2. No oils or lubricants will be discharged in the sand to avoid water pollution.

**vi. Climate**

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

**vii. Biological Environment**

The project is only of extraction of minor minerals viz. sand from the river quarry.

Flora: The area is completely barren and devoid of any vegetation in the river. Only few thorny bushes are seen on the banks of the River.

Fauna: As there is no forest cover, no wild life can be seen in this area.

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1. There will be no significant impact of the river quarry mining project on the biological diversity found in the 5km. radius of the site.
2. The mining lease area is in non-forest land i.e. sandy river quarry where presence of fauna is not at all seen. As such, there will be no adverse impact of the manual mining activity on fauna around the mining lease area.
3. No adverse impacts will be envisaged on the existing aquatic fauna, on downstream side (away from site) as the mining confined to above water level only and at all touching/disturbing water table.

**viii. Socio-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- A. The mining operations will provide direct & indirect employment village people.
- B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- C. Local work force will be given first preference for employment.
- D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area)

**4 Impact assessment report along with proposed mitigation measures.**

Preparation of Environmental Management Plan is required for formulation, implementation, and monitoring of environmental protection measures during and after commissioning of projects. The plan should indicate the details as to how various measures have been proposed to be taken including cost components as may be required.

**1. Land Environment**

The type of mining and the characteristics of the mineral deposit both affect the degree to which mining disturbs the landscape. Sand Mining and allied activities will be done in the fluvial plain formed by river meandering. Mining of sand may cause a few environmental degradations.

**a. Anticipated Impacts:**

- ❖ Damage of riverbank due to access ramps to riverbed, may cause soil erosion.
- ❖ Destruction of river bank hinterland and ecological due to extraction of sand by probability of damage to the flood control bunds (built along the river side) due to heavy movements of vehicles over the bund to approach the mine area and further during transportation for sand from the mine area.
- ❖ Improper disposal of packing material, carried by the workers like used sachet/ gutka /pan masala pouches.
- ❖ Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations, borehole users due to dust, noise and it also causes traffic hazards.

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**Environmental Management Plan**

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- ❖ Surface degradation due to road network.

**b. Mitigation Measures:**

- ❖ Safety distance of 3 meter or 1/10th of the width of the river whichever is more will be left from both the banks of the river (as per “Sustainable sand mining guidelines”).
- ❖ No foreign material like polythene bag, jute bag and useless articles should be allowed to remain/spill in river bed and catchment area, or no pits/pockets will be allowed to be filled with such material.
- ❖ Minimum number of access roads to river bed for which cutting of river banks will be avoided and ramps are to be maintained.
- ❖ Care will be taken to ensure that ponding is not formed in the river bed.
- ❖ Mining will not exceed beyond the allowed extraction capacity.
- ❖ Green belt will be developed along the haul road and the bank of rivers of mine premises and near the sand mining site. While selecting the plant species, preference will be given for planting native species of the area.

**3. Water Environment**

**a. Anticipated Impacts:**

- ❖ As the project activity is carried out in the dry part of river bed, none of the project activities will affect the water environment or riverbank habitats. Project activities will not have any adverse effect on the physical components of the environment and therefore may not have any effect on the recharge of ground waters or affect the water quality. Monitoring of water quality will be checked yearly.

**b. Mitigation Measures:**

- ❖ Mining is avoided during the monsoon season and at the time of floods. This will help in replenishment of sand in the riverbed.
- ❖ Mining below subterranean water level will be avoided as safeguard against environmental contamination and over exploitation of resources.
- ❖ River stream will not be diverted to form in active channels.
- ❖ Utmost care will be taken to minimize or control leakage vehicles to be used for sand transportation.
- ❖ The washing of tractor trolleys in the river will be avoided.
- ❖ The contractor will follow all guidelines and rules for proper and scientific method of mining during the period of extracting the sand.

**4. Air Environment:**

**a. Anticipated Impacts:**

**Due to Haul Road/ Access Road:**

- ❖ Plying of tractor trolleys from public road to river sand collection points needs access roads.
- ❖ Majority of such access roads are the same existing roads/tracks being used by pedestrians/cart owners. Movement of heavy vehicles sometimes causes

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problems to cattle, agriculture land, and human habitations due to dust, noise and movement of public.

- ❖ These environmental problems are felt more as the area is rural in nature.

**Due to Mining process:**

- ❖ Air pollution is likely to be caused at various stages of sand mining operations such as excavation, loading & transportation of material.
- ❖ Most of the dust will be generated from loading & transportation. This dust becomes air borne and gets carried away to surrounding areas.
- ❖ The impact on air is mainly localized in nature as the dust particles are not carried to longer distances and the effect is felt within the core zone of the project involving active Sand mining operations.

**b. Mitigation Measures:**

**Mitigation of Impacts on Access Roads:**

- ❖ Movement of the vehicles on the road will be increased; however, unmetalled road in the mining area will be sprinkled with water at regular intervals.
- ❖ In addition to prevent spillage by tractor trolleys over loading should be controlled along with speed limit (1Brass /tractor trolley).
- ❖ Maintenance of haul road will be done on regular basis.

**c. For Fugitive Dust Emission:**

- ❖ To avoid fugitive dust emissions at the time of excavation, regular sprinkling of water will be done on regular basis.
- ❖ Sand is transported to the sites by road through tractor trolleys. The sand carrying vehicles shall be covered by tarpaulin sheets.
- ❖ The Green Belt development will be prepared along the haul roads, which will act as a pollution sink.
- ❖ To minimize the vehicular pollution from the sand transporting vehicles, the following conditions will insist to permit the vehicles of the transporters.
- ❖ The vehicles should be (Bharat-IV stage) compliant and should have pollution control certificate (PUC) issued by appropriate authorities.
- ❖ Regular maintenance of transport vehicles and monitoring of vehicular emission levels at periodical intervals.

**5. Noise:**

**a. Anticipated Impacts:**

Noise environment in this project will be affected only by the equipment at the site and vehicular transportation. Since slight increase in noise levels can be expected.

**b. Mitigation Measures:**

- ❖ Minimum use of Horns at the village area.
- ❖ Timely maintenance of vehicles and their silencers to minimize vibration and Sound.
- ❖ Phasing out of old and worn-out tractor trolleys.
- ❖ Provision of green belts along the road networks.
- ❖ Care will be taken to produce minimum sound during sand loading.

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- ❖ Use of Backhoe and ear plugs may be provided to protect the labors working at the site.

**6. Socio-Economic Environment**

This project operation will provide livelihood to the poorest section of the society.

**Anticipated Impacts and Evaluation:**

- ❖ The project activities shall not have any adverse impacts on any of the common property resources of the village communities, as the sand mine lease area is not being used for any purpose by any section of the society in this region.
- ❖ There is no R & R involvement in this project.
- ❖ There is no land acquisition in this project.
- ❖ The results of the field survey conducted to understand the knowledge and perception of the people living around the project area gives a clear idea about the need for the project.
- ❖ A major portion of the houses in the study area are semi- pucca type structures.
- ❖ The water source to these areas is from the municipal connection and private bore wells and wells. The awareness level regarding the proposed mining activity is very high. The proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes.

**a. Social and Demographic Profile:**

The workers are from local villages. These people have been provided all welfare from a lessee like medical benefits, insurance, fees for children's education etc. They have some land and cattle for their daily earnings. Additional income earned from the Sand Mining work will improve their living standard. The group of quarries in and around will help to have infrastructure facilities like roads, schools, shops etc. This will improve their social life.

**b. Occupational Health and Safety:**

This is Riverbed Sand Mine. So, the mining activities are comparatively less because the production is not on large scale. Workers do not come across any extreme condition like excessive heat, moisture etc. Workers working around it may come across this dusty environment, which can be managed by providing face mask.

**c. Human Settlement:**

There are no houses in and around lease area. All the due precautions will be taken during mining. Transport of finished products is through the villages. There will be psychological impact of the traffic on the local people. However, the intensity of traffic is less.

**d. Health and Hygiene:**

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In general, the health of villagers is moderately good. In the rainy season, the atmospheric condition is unhygienic due to lack of proper drainage and sanitation in the village habitation. Villagers are working in agricultural fields and work as laborers.

**e. Education:**

- a. Mostly education is up to middle standard. Economic condition is in general moderate. So, after this project the standard of education will be increase.

**f. Socio Economic Benefits Arising Out of Mining:**

- a. Generation of employment in the rural area.
- b. Improvement in the living standards of the rural people.
- c. Creating of infrastructural facilities like roads, electricity, shops, school etc.
- d. Helping to improve literacy in the area Exploiting natural mineral so generation of revenue.
- e. Helping to sustain construction activity.
- f. Improving the greenery of the area, this is otherwise poor.

**g. Liquid Effluent:**

Not applicable because small mine and impacts are negligible.

**h. Solid Waste:**

Not applicable because small mine and impacts are negligible.

**6. Biological Environment**

**Anticipated Impacts:**

- ❖ **Aquatic environment-** Proposed mining of the dry bed of the river, so no possibility of disturbance of aquatic life.
- ❖ **Flora and Fauna-** The mining activity will have insignificant effect on the existing flora and fauna. The project area is surrounded with agricultural land. It was found that the sand mining activity will not have any significant impact on the biological environment of the region.

**Mitigation Measures:**

- ❖ Improvement in riverbank stability.
- ❖ Large woody debris in the riparian zone will be left undisturbed or replaced when moved and not be burnt.
- ❖ Vegetative debris will not be stored within the mine lease area.
- ❖ Operation and storage of heavy vehicles within riparian habitat will be restricted.
- ❖ Covering of loaded vehicles to reduce dust emission, which may harm surrounding agricultural crops and other plant species conservation of biological diversity of plants, birds, and animals.
- ❖ Greenbelt Development and Bio-Diversity Preservation Plantation activities will be carried out at the bank of the river and along the haul roads. This activity will help for maintaining ecology and environment of the area.

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**5 Project Benefits**

The proposed expansion project will lead to the following benefits:

- Sand is available for Building and Construction work and by regular removal of sand there is no possibility of flood.
- This project will contribute additional revenue to the state Exchequer in the form of revenue.
- The project will result in the employment opportunities to the unskilled/skilled local people.

Thereby, the quality of life of the employed people will increase.

**6 Sand Ghat Closure Plan**

S. No	Head	Area put on. use at start of plan [in Ha]	Additional Requirement during Plan period [in Ha]	Total [in Ha]	Area considered as	Net consider for calculation
1	Area under mining / pit	-	3.5	3.5	3.5	3.5
2	Area under dump	NIL	---	---	---	---
3	Infrastructure Workshop Administrative Building etc.	--	--	--	--	--
4	Roads	--	--	--	--	--
5	Mineral reject	--	--	--	--	--
6	Green Belt Plantation /Soil dump	--	--	--	--	--
7	Tailing Dam /pond	--	--	--	--	--
8	Effluent Treatment Plant	--	--	--	--	--
9	Mineral storage	--	--	--	--	--
10	Township area	--	--	--	--	--
11	Other to specify	--	--	--	--	--
<b>GRAND TOTAL</b>			3.5	3.5	3.5	3.5

- ❖ Mining will be avoided during monsoon and floods; this will allow the sand deposit to replenish.
- ❖ Gabion structure will be constructed for the sand to replenish during monsoon season.

**7 Planning brief:**

**The proposed project is opencast manual sand mining activity.**

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**Supply demand ratio:**

Information required on demand and supply of district (2023-24)			
S.No.	Name of District	Total sand Demand of District in Brass	Total Sand Available in district in Brass
1	Jalgaon	191380	104531

**8 Compliance of earlier Environmental Clearance**

- ❖ Hingone Sim Pra.Jalod sand spot of Hingone Sim Pra.Jalod village of Amalner tehsil has got environmental clearance in the year 2021-2022 but the sand ghat didn't get a response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot.

**9 Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020.**

- ❖ District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- ❖ Appropriate feedback and its redressal mechanism shall also be made operational.
- ❖ Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- ❖ Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- ❖ The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- ❖ Printed on Indian Bank Association (IBA) Approved
- ❖ Magnetic Ink Character Recognition Code (MICR) paper
- ❖ Unique Barcode
- ❖ Unique Quick Response Code (QR)
- ❖ Fugitive Ink Background
- ❖ Invisible Ink Mark
- ❖ Void Pantograph
- ❖ Watermark
- ❖ GPS BASED VEHICLE TRACKING SYSTEM
- ❖ CCTV Camera



**Hingone Sim Pra.Jalod sand spot over an extent of 3.5Ha At Tapi River Bed Gut No.6 & 7, Hingone Sim Pra.Jalod Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

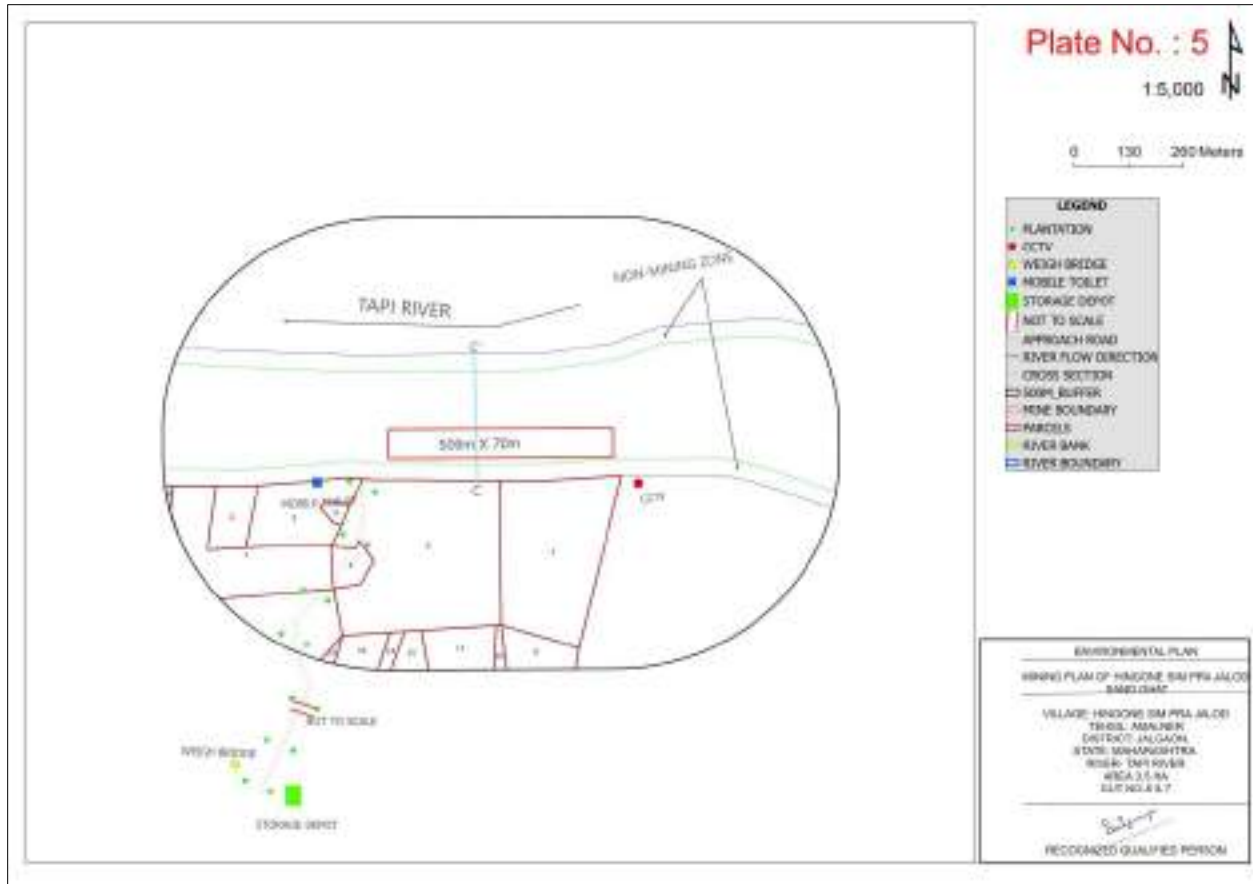
**Environmental Management Plan**

Cluster certificate with reference to the EIA Notification 2006 amended from time to time with specific remarks on the cluster formation in the periphery of the proposed sand ghat along with area map showing distances between adjoining sand mine areas.

Hingone Sim Pra.Jalod does not form a cluster.

**10 Layout of proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc.**

Proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc. layout is given below:



**11. Proposed approach road for transport of mined sand from sand ghat to the storage area and consent of storage area from the concerned landowners is an after-auction activity to use their land as approach road.**

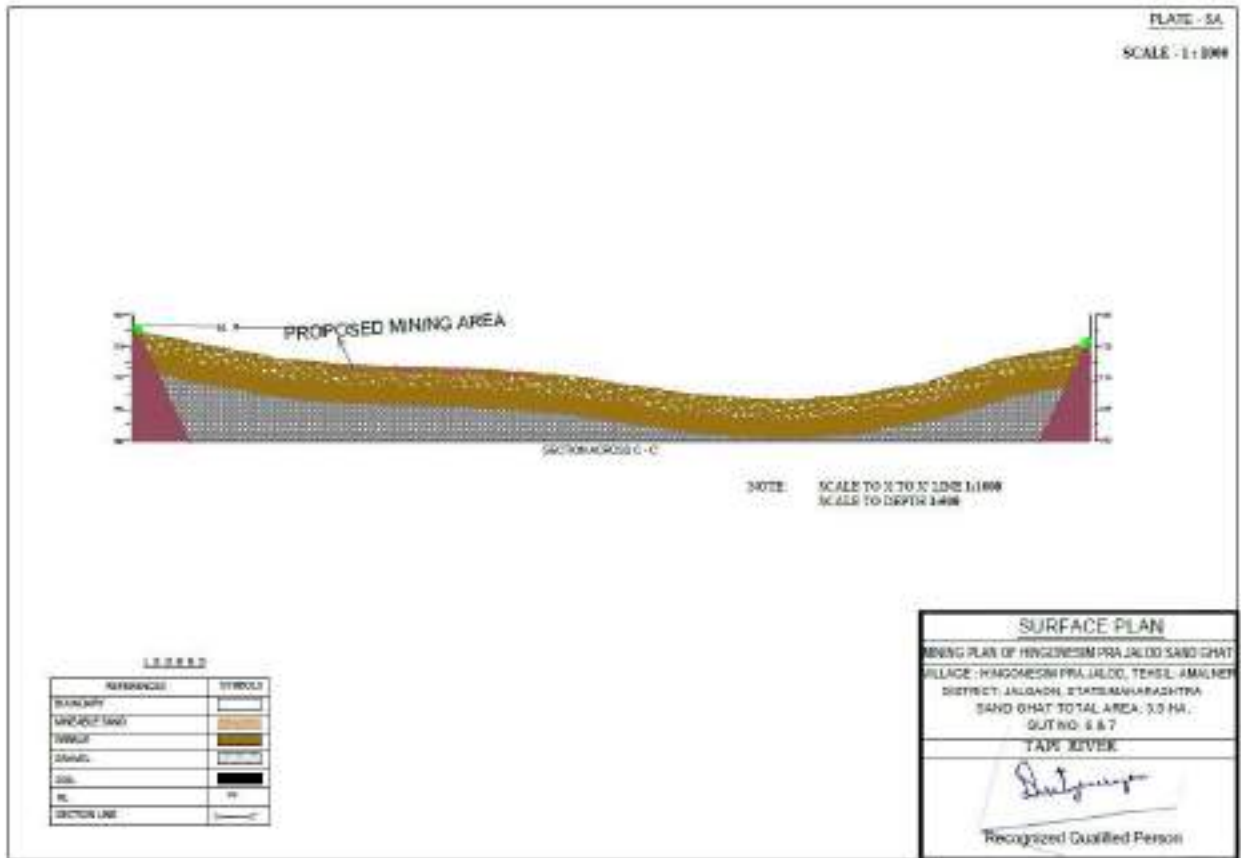
The proposed approach road length is at 1046m and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the river bank. Consent of road submitted by Jalgaon Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from land owner.

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**12. Cross -Section of riverbed showing distance of proposed sand mine area from the riverbank and other details as prescribed in the Enforcement & Monitoring Guidelines for sand mining published in January 2020 by MoEF&CC.**

Cross section of riverbed is shown below:



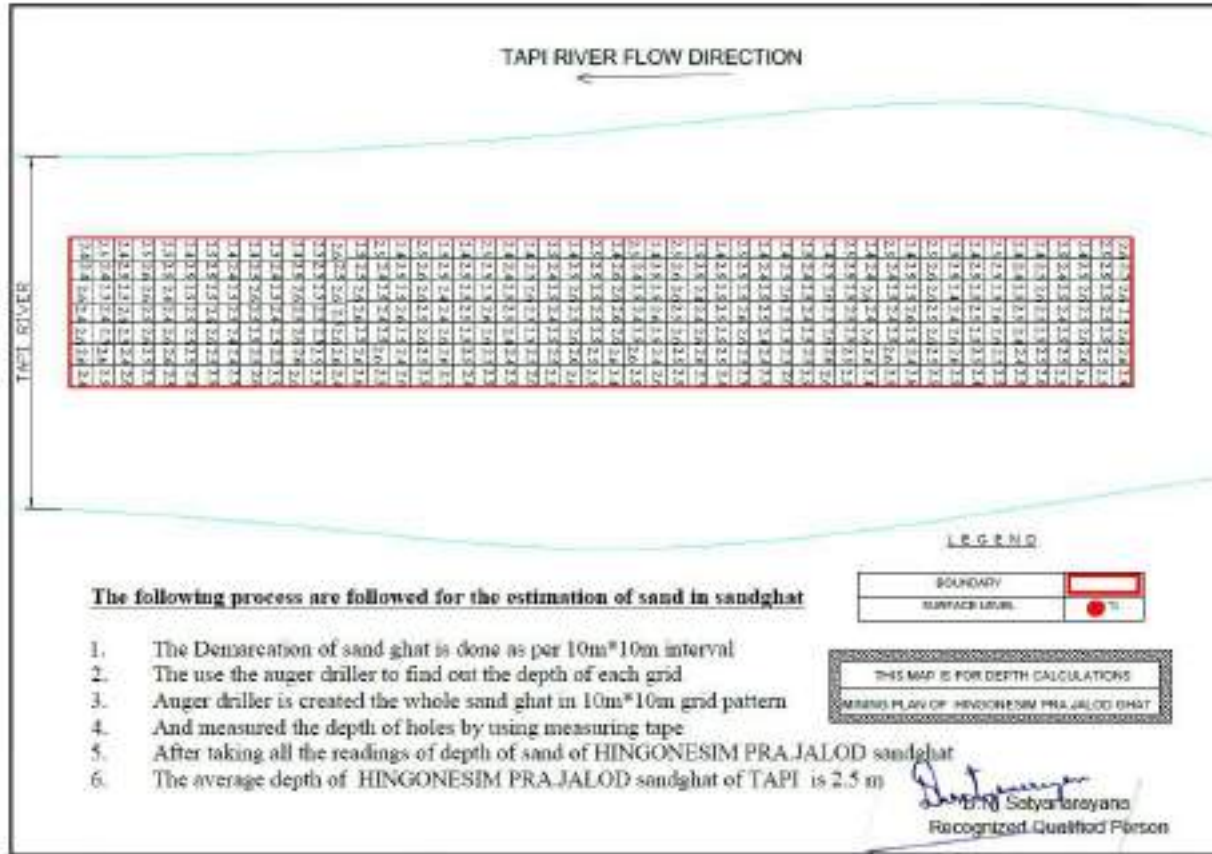
**13. Details of District Level Task Force committee meetings and status of compliance of its recommendations if any.**

District Level Task Force Committee Meeting details is enclosed.

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**14. Methodology for Sand Mining:**



**15. Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.**

**DANDY-BOLTON EQUATION**

1. **For Runoff Less Than 2 Inches**  

$$S = 1280 * (Q)^{0.46} * (16 - 0.26 \log(A)) * F$$
2. **For Runoff More Than 2 Inches**  

$$S = 1958 * (Q) * (e^{-0.055 * Q}) * (13 - 0.26 \log(A))$$

Where

- S= sediment yield of stream (t/yr./km<sup>2</sup>),
- Q= average annual runoff (m<sup>3</sup>),
- A= net drainage area in sq. Mile

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The sediment yield of Tapi river at Hatnur dam station are  $1.08 \times 10^3$  tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation.

**(Source: State Irrigation Department)**

**Conclusion:**

As per above data sedimentation yield for Tapi River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**16 PP to submit details of proposed plantation plan along with its location and requisite permission to be obtained from the Competent Authority.**

Plantation details are presented below:

<b>Location of greenbelt</b>	Both sides of approach road, On the riverbanks of both sides of the sand spot & nearby open areas. Haul Road outside riverbed.
<b>No. of plants to be planted</b>	1296
<b>Spacing of plants</b>	4 m grid interval
<b>Species selected</b>	Native species

Tree species recommended for Plantation:

<b>Botanical name</b>	<b>Local name</b>	<b>Importance</b>
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

**17 BUDGET FOR CORPORATE ENVIRONMENT RESPONSIBILITY (CER)**

**Hingone Sim Pra.Jalod sand spot over an extent of 3.5Ha At Tapi River Bed Gut No.6 & 7, Hingone Sim Pra.Jalod Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

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About 2% fund of the project cost is allocated for Corporate Environment Responsibility (CER) activities as presented in below Table:

SNo.	Budget Allocated	Budget (In INR)
1	Installation of one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	35000
3	Needed Repairing work with consultation of Grampanchayat	35000
4	Community Infrastructure Development(Steel fencing to ZP school with consultation of Grampanchayat)	150000
Total		3,00,000

**18 Environmental Management Plan (EMP)**

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR **369000** and recurring cost provision of about INR **365000** has been kept in the project cost towards the environmental protection, control and mitigation measures and implementation of the EMP, this cost is born by bidder / lease holder. The budgetary cost estimate for the EMP is given in Table.

**Table 6: Environmental Budget**

Hingone Sim Pra.Jalod			EMP Budget		
SNo.	Component	Description	Capital cost Rs.	Recurring Cost Rs.	Total Cost in Rs
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	55000	55000
3	Approach Road Maintenance		-	45000	45000
4	Green Belt Plantation	Along the River Bank	62500	-	62500
		Along the Approach Road	261500	-	261500
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	5000	-	5000
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	60000	60000
7	Security	Display Boards and other security measures	15000	-	15000

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8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health check-up (1000Rs./ Employee)	-	55000	55000
9	Tarpaulin Cover (5000 INR per one Cover)		25000	-	25000
<b>Total</b>			<b>369000</b>	<b>365000</b>	<b>734000</b>

**19 Public Consultation Report**

Amalner					
S.No	Villager Name/Village,Taluka	Type of Person (Villager/Government Official)	Query raised by the Villager/Official	Response from the Proponent	Action Plan

**20 Summary and Conclusion**

The environmental status of the project site and study area of 10 km radius is delineated with respect to air, noise, water, land, biological and socio-economic environment the different project activities in the construction and operation phases are identified. To identify the impacts, the interaction between the project activities and different components of the environment are classified phase wise. A summary of the identified impacts is given in the following paragraphs.

During the operational phase, transportation of sand could cause a temporary disturbance to local environment which will be prevented with the proposed mitigation measures proposed in Point no. 4.

Proposed project will not have any major significant negative impacts. The minor impacts arising out during Excavation and Transportation phases can be mitigated with the help of the proposed Environmental Management Plan.

In general, Sand excavation from Hingone Sim Pra.Jalod Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

### **PRE-FEASIBILITY REPORT**

The Hingone Sim Pra.Jalod Sand Spot is situated at Village Hingone Sim Pra.Jalod , Taluka Alamner, District- Jalgaon. Sand Spot is 3.5Ha of area in Gut No 6 & 7 of Hingone Sim Pra.Jalod village of Amalner Tehsil, Jalgaon district. Detail of the project is summarised below

- District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- District Collector Jalgaon appointed M/s Integrated Precision Systems & Services Pvt. Ltd., for preparation of Mining Plan and grant of environmental clearance.
- Applicant proposed to auction the said Sand Spot over an area of 3.5Ha area and identified for preparation of mining plan and for grant of Environmental Clearance.
- Mining Plans are prepared by Recognized Qualified Person and approved by Directorate of Geology & Mining Govt. of Maharashtra.
- About 6183 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Tapi river bank.

#### **1. Physiography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 147 to 150 from MSL i.e 3m. The Highest contour value is 150 and lower is 147. The flow direction of TAPI river is towards SW

#### **2. Local Geology**

The local geology is Sand of various size up to depth of 2.5- 3meter.

#### **3. Details of Exploration**

**Hingone Sim Pra.Jalod sand spot over an extent of 3.5Ha At Tapi River Bed Gut No.6 & 7, Hingone Sim Pra.Jalod Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the river bed.

Mining - The mining will be continued with present method of open cast mining by cutting slice of 0.5m of Sand along topo-relief, by advancing from SW to NE direction as per allotted area by auction. The production can be at the rate of 17500 Cu.m or 6183 brass i.e. 1 year from the date of mining plan approval, the size of pit at the end will be 3.5Ha.

**Introduction of the project/ background information**

The Hingone Sim Pra.Jalod Sand Spot has been kept for Auction which is situated at Village Hingone Sim Pra.Jalod , Taluka Amalner , and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

**i) Brief description of project**

The Sand Spot has sufficient Reserve of Sand to work at 17500 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m area of Sand by advancing from North to South direction as per allotted Sand Spot area and handling of material with the help of labourer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**ii) Need for the project**

The Sand or Sand Spot under reference is aimed at exploring Sand as ROM in various sizes i.e. fine to Coarse grain which is Transported to consumer site in outside Sand Spot area, for the infrastructure development i.e. Construction activity to produce Concrete for putting in the floor, roof- slabs, Column, Pillars, Bridges & Dam construction.

**3. Project Description**

This mining project is an independent project and not an interlinked project.

**i) Location**

Hingone Sim Pra.Jalod is a small Village in Amalner Taluka in Jalgaon District of Maharashtra State, India. It comes under Hingone Sim Pra.Jalod Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 49KM towards SE from District headquarters Jalgaon. The Sand Ghat is 330KM from State capital Mumbai.

Area covered in SOI Toposheet No- 46P/4.

The boundary pillars of Sand Spot area are given below with GPS values.



**Hingone Sim Pra.Jalod sand spot over an extent of 3.5Ha At Tapi River Bed Gut No.6 & 7, Hingone Sim Pra.Jalod Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

<b>Boundary Points Hingone Sim Pra.Jalod</b>	<b>Latitude</b>	<b>Longitude</b>
BP1	21°10'25.92"N	75° 7'52.48"E
BP2	21°10'25.82"N	75° 7'35.14"E
BP3	21°10'28.10"N	75° 7'35.12"E
BP4	21°10'28.20"N	75° 7'52.46"E

**ii) Alternate Sites**

No alternate site is proposed.

**iii) Magnitude of Operation**

Proposed period for mining of sand will be decided by the office of district collectorate 17500 cu.m. will be excavated during the period.

**iv) Project description-mining details**

The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 500m L X 70m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable. The Sand Spot has sufficient Reserve of Sand to work at 17500 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m slice of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**v) Raw material, marketing & transport of ore**

The proposed sand spot will be auctioned, and successful bidder will be responsible for carrying out mining operations as per environmental terms and conditions, approved mining method as per approved mining plan and other terms and conditions. The loading of Sand generated to the tractor/tipper/dumpers will be done by loaders & material transported to the Dealer site.

**vi) Resource optimization, recycle, reuse**

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

**vii) Water & energy requirement**

The major water requirement in the lease area is for dust suppression and for drinking use. The total water requirement is estimated as 8.2 KLD the required water for dust suppression can be arranged

**Hingone Sim Pra.Jalod sand spot over an extent of 3.5Ha At Tapi River Bed Gut No.6 & 7, Hingone Sim Pra.Jalod Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

through tankers from nearby village and drinking water will be provided in earthen pots for labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

**viii) Quantity of waste & scheme for management**

There will not be any waste generation within the lease area.

**ix) Schematic Representations**

It is a proposal of opencast manual sand mining from river bed. Mining plan is approved by the competent authority.

**4. Site Analysis**

**i) Connectivity**

Hingone Sim Pra.Jalod is a small Village in Amalner Taluka in Jalgaon District of Maharashtra State, India.

The sand spot area is connected to approach road at a distance of 1046m in South direction. Dharangaon Railway Station is present at a distance of 25km.

**ii) Land Use, form & Ownership**

The ultimate land use pattern for the lease area of 3.5Ha. will be consisting of

- |                                    |   |          |
|------------------------------------|---|----------|
| 1. Mining Area                     | : | 3.5Ha.   |
| 2. Construction of Temporary Roads | : | 0.00 ha. |
| 3. Total                           | : | 3.5Ha.   |

At present ownership of this sand spot area is in the hand of Govt. of Maharashtra, after approval of mining plan and EC quarry area will be transfer to bidder after auction.

**iii) Geology**

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

**Existing land use pattern**

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

**Social-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- A. The mining operations will provide direct & indirect employment village people.
- B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- C. Local work force will be given first preference for employment.

**Hingone Sim Pra.Jalod sand spot over an extent of 3.5Ha At Tapi River Bed Gut No.6 & 7, Hingone Sim Pra.Jalod Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

- D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area).

**Planning brief:**

**The proposed project is opencast manual sand mining activity.**

**Supply demand ratio:**

<b>Information required on demand and supply of district (2023-24)</b>			
<b>S.No.</b>	<b>Name of District</b>	<b>Total sand Demand of District in Brass</b>	<b>Total Sand Available of district in Brass</b>
1	Jalgaon	191380	104531

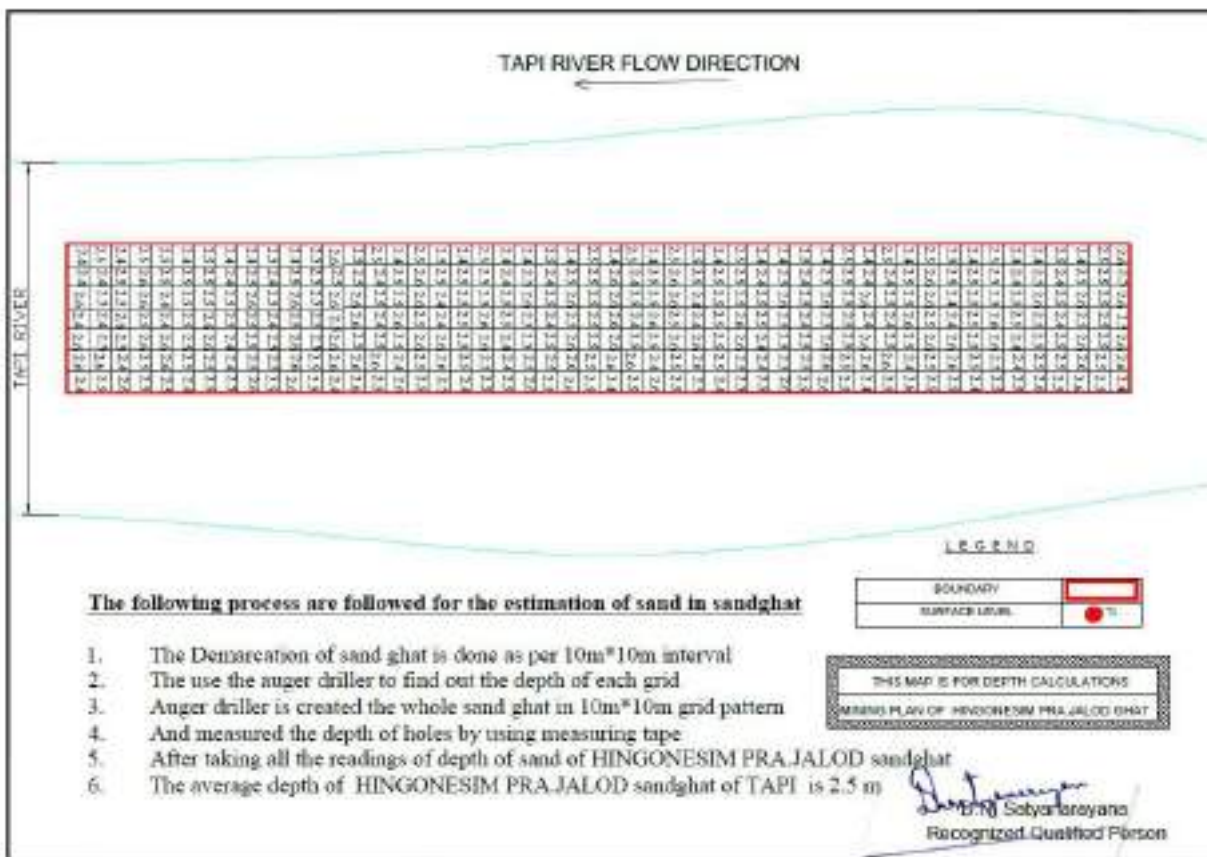
**Replenishment:**

- Area of deposition and erosion was calculated for each cross-section after giving due regard to stability & safety of active channel banks & other features of importance.
- DGPS and other survey tools have been used to define topography, contours and offsets of lease area.
- Contour & elevation benchmarks are provided with the baseline data for assessing pre and post-study period scenario.
- Physical benchmarks are fixed at intervals (1 in 30 m) & Reduced Levels (RL) are validated from a nearby standard RL.
- These RL are engraved on a steel plate (Bench Plate) & are fixed & placed at locations which are free from any damages & are available in pre and post-study period.
- Bench plates are available for use during the mining period as reference for all mining activity.
- Baseline data on elevation status for a grid of 10 m x 10 m is taken to ensure the accuracy in the assessment.
- It was made sure that two consecutive cross-sections in longitudinal and lateral direction is not be more than 10-meter distance apart.
- Changes have been observed in the elevation in pre and post scenario at each node and were depicted in graphical forms with an appropriate scale for estimating the area of deposition & erosion.
- Elevation level was placed in reference to the nearest bench-plates established for the purpose.
- The levels (MSL & RL) of corner point of each grid were identified and safety barriers (Non-Mining) are demarcated as restricted in consensus with Mineral Concession Rules of respective State, and the provision mentioned in this Sustainable Sand Mining Management Guidelines.
- A clear identification was highlighted between grids under mineable and grids under the non-mineable area. These baseline data (pre and post) was subjected to stimulation

with the help of data mine software to derive at the replenishment area and corresponding volume and estimated weight.

- The database was structured in a tabulated form clearly depicting the nomenclature of the section lines, latitude and longitude of the starting point, chain-age and respective levels of all the points taken on that section line.
- Net area was derived after summation of area of deposition minus area of erosion for each cross-section.
- Volume was estimated by multiplying distance between two cross-sections with average of net area of these two consecutive cross-sections.
- One sample per 900 square meters (30 m x 30 m) was preferred for sample density for assessment of bulk density for estimation of deposition rate.
- Care was taken that the sample for assessment of bulk density is taken from the deposition zone & not from erosion.

**Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.**



**DANDY-BOLTON EQUATION**

1. For Runoff Less Than 2 Inches

$$S=1280(Q)^{0.46}(1.46-0.26\log(A)) *F$$

**2. For Runoff More Than 2 Inches**

$$S=1958(Q)^{(e-0.055*Q)} *(1.43-0.26\log (A))$$

Where

S=sediment yield of stream (t/yr./km<sup>2</sup>),

Q= average annual runoff (m<sup>3</sup>),

A= net drainage area in sq. mile

The sediment yield of Tapi river at Hatnur dam station are 1.08\*10<sup>23</sup> tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation.

**(Source: State Irrigation Department)**

**Conclusion:**

As per above data sedimentation yield for Tapi River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020**

- District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- Appropriate feedback and its redressal mechanism shall also be made operational.
- Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- Printed on Indian Bank Association (IBA) Approved
- Magnetic Ink Character Recognition Code (MICR) paper
- Unique Barcode
- Unique Quick Response Code (QR)
- Fugitive Ink Background

**Hingone Sim Pra.Jalod sand spot over an extent of 3.5Ha At Tapi River Bed Gut No.6 & 7, Hingone Sim Pra.Jalod Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

- Invisible Ink Mark
- Void Pantograph
- Watermark
- CCTV at mine lease site
- GPS Based Vehicle Tracking System

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided outside Sand Spot area.

**Compliance of earlier Environmental Clearance**

Hingone Sim Pra.Jalod sand spot of Hingone Sim Pra.Jalod village of Amalner tehsil has got environmental clearance in the year 2021-2022 but the sand ghat didn't get a response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot.

**7. Proposed Infrastructure**

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided in outside Sand Spot area.

**8. R&R Plan**

R&R is not involved.

**9. Project schedule**

Period of mining for the proposed sand spot will be decided by the Office of District Collectorate.

**10. Analysis of Proposal**

Description of the project included in items 1-10 above indicates the following:

1. It is proposed for opencast manual river sand mining.
2. Opencast mining without hampering the present environmental quality of the area.
3. Income to local people is uncertain & initiation of mining will ensure regular income to local people.

**11. Costing**

Costing parameters will be decided by the District Authorities.

**12. Compliance to Environment Clearance**

Whether there are any serious violation of safety rules and regulation which may jeopardize human health and safety. If so, give details of violations and state the steps proposed to be taken with the time scheduled to rectify the violations:

No, there are not any serious violation of safety rules and regulation, which may jeopardize human health and safety. The applicant has given a commitment in this effect and undertaking also given to follow and implement, as specified in the mining plan. The applicant is undertake to abide and implement any special conditions imposed by various authorities and also to complete formalities under provision of the Mines & Mineral (Development & Regulation) Act, 1957 and the Bombay Minor Mineral rules, the Mineral Conservation and Development Rules, 1988 as amended, the Maharashtra Minor Minerals Extraction

**Hingone Sim Pra.Jalod sand spot over an extent of 3.5Ha At Tapi River Bed Gut No.6 & 7, Hingone Sim Pra.Jalod Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

(Development and Regulation) Rule 2013, MoEF&CC Notification S.O. 141 (E) dated 15th January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, Sustainable Sand Mining Management Guidelines 2019, Sand Mining Policy 2020

**13. Any Other Information:**

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule-2013, MoEF&CC Notification S.O. 141 (E) dated 15<sup>th</sup> January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.05.1994 and 04.09.2006.

**Risk Assessment for Hingone Sim Pra.Jalod Sand Spot**

**1. Introduction**

A main principle of risk assessment is that it should take place before any changes are made. Risks should be assessed and control measures are put into action before new work is introduced or systems are changed. The process should influence budgets and allocation of resources, rather than being an afterthought when the decisions have already been made.

The risk management process is continuous, with well-defined steps that support better decision making by contributing greater insight into risks and their impacts. Risks from all sources are identified and once they pass the materiality threshold, a formal process begins in which causal factors and consequences are identified and the correlation with other risks and the current risk mitigating strategy is reviewed. One of the challenges is to ensure that mitigating strategies are geared to deliver reliable and timely risk information to support better decision-making.



The mining operations at HINGONE SIM PRA.JALOD SAND SPOT are subjected to the risks and hazards normally encountered in open-cast mining operations. These risks include operational risks relating to

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materials handling, accidents, removing material from quarry area. Mining processes also rely on key inputs, for example fuel. Appropriate insurance can provide protection from some, but not all, the costs that may arise from unforeseen events. If any of these risks should materialize, such an event could result in serious harm to employees and contractors, delays in production, increased production costs and possible increase in liabilities.

Disruption to the supply of key inputs, or changes in their pricing, may have a material and adverse impact on HINGONE SIM PRA.JALOD SAND SPOT asset values, costs, earnings and cash flows. Failure to meet production target results in increased unit costs. The impact is more pronounced at operations with a high level of fixed costs. Mitigation strategies include efforts to secure strategic supplies at competitive prices, energy reduction, and application of group water management guidelines, adoption of lean production principles and practices and business improvement initiatives to reduce unit costs.

There are certain aspects which should be taken care of, in a quarrying plan with accordance of risk management.

<b>Components</b>	<b>Risk Involved</b>
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
Fire	Only trucks and tractors will make use of diesel for transportation. Diesel is not so highly inflammable but accidental fires can take place.
Road Accidents	Vehicles are used for transporting the material from quarry area to the buyer's location. Due to some improper maintenance of the vehicle a road accident can occur leading to fatal results.

To minimize the risk, certain measures can be taken like implying safety rules, facilities of basic first aid near the site and having training for the workers about personal safety.

Disaster Management Plan is envisaged with a goal to prevent hazards and accidents at work places by careful design, operation, and maintenance of equipment's. All safety precautions and provisions of Metalliferous Mines Regulation-1961 will be strictly followed. Suitable control measures will be adopted to take care of hazards/disasters that may occur during mining operation.

- No mining activities during rainy days or just after heavy rain.
- Fire fighting, first aid provisions & safety appliances will be made available to the staff and their use regularly checked
- Regular maintenance of all haulage roads & mining machinery as per manufacturer's guidelines will be done

**APPENDIX VIII**  
**(See paragraph 6)**

**FORM 1 M**

**APPLICATION FOR MINING OF MINOR MINERALS UNDER CATEGORY 'B2' FOR LESS THAN AND EQUAL TO FIVE HECTARE**

**(I) Basic Information**

(i) Name of the Mining Lease site: Narne Sand Spot

(ii) Location / site (GPS Co-ordinates):

Boundary Points Narne	LATITUDE	LONGITUDE
BP1	21° 7'56.90"N	75°18'52.34"E
BP2	21° 7'55.55"N	75°18'52.09"E
BP3	21° 7'56.32"N	75°18'47.25"E
BP4	21° 7'56.16"N	75°18'41.91"E
BP5	21° 7'57.52"N	75°18'41.86"E
BP6	21° 7'57.68"N	75°18'47.35"E

(iii) Size of the Mining Lease (Hectare): 1.26HA

(vi) Capacity of Mining Lease (TPA): 2226.14841 Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 13.35 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, Maharashtra

**(II) Environmental Sensitivity**

S. No.	Areas	Distance in Kilometer/Details
1	Distance of project site from nearest rail or road bridge over the concerned River, Rivulet, Nallah etc.	Bridge on SH-14, 8.65Km, NW
2	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road Any Other Road Electric transmission line pole or tower Canal or check dam or reservoirs or lake or	Jalgaon Railway station, 29.1 Km, SW  No NH SH-14, 1.1Km, SW 1.1Km, SW 1.24Km, SW ET, 0.86Km, SW Nil

*Narne sand spot over an extent of 1.26Ha At Girna River Bed Gut No. Out of 6, Narne Village, Tehsil-Dharangaon, Jalgaon District, Maharashtra.*

Form 1M

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	ponds In-take for drinking water pump house Intake for Irrigation canal pumps	Nil Nil
3	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil
4	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Water bodies: this is the case of river sand mining in Girna River bed; RF,16.8Km, SE
5	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil
6	Inland, coastal, marine or underground waters	Girna River bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	No NH SH-14, 1.1Km, SW 2.25Km, SW
9	Defence installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Nanded, 4.31Km, NW
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Nanded English School, 4.21Km, NW Civil Hospital, 4.2 Km,NW
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Girna River Bed ( this is the case of river sand mining) RF,16.8Km, SE
13	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil
14	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse	The mine lease area falls in Seismic Zone III (Moderate), according to the Indian Standard Seismic Zoning Map.

*Narne sand spot over an extent of 1.26Ha At Girna River Bed Gut No. Out of 6, Narne Village, Tehsil-Dharangaon, Jalgaon District, Maharashtra.*

**Form 1M**

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	climatic conditions)	
15	Is proposed mining site located over or near fissure / fracture for ground water recharge	No
16	Whether the proposal involves approval or clearance under the following Regulations or Acts, namely:- (a) The Forest (Conservation) Act, 1980; (b) The Wildlife (Protection) Act, 1972; (c) The Coastal Regulation Zone Notification, 2011. If yes, details of the same and their status to be given.	No
17	Forest land involved (hectares)	Nil
18	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Orders or directions of the Court, if any, and its relevance with the proposed project.	Nil

**Narne sand spot over an extent of 1.26Ha At Girna Riverbed Gut No: Out of 6, Narne  
Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

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**1. Introduction**

Ministry of Environment and Forest (MoEF) Notification 2006 and Sustainable Sand Mining Management Guidelines 2016 and as per provision in Mines and Minerals (Development and Regulation) Act 1957 Schedule 60 section 15, Govt Of Maharashtra makes a Minor Mineral Extraction Rules 2013 to extract all the minor mineral in scientific way so that there is no adverse impact on Environment and Climate. To extract every minor mineral from any land (either Government or Private) there is provision of mining plan which is approved by competent authority; For long term leased minor mineral (5 – 10 years period) and Sand excavation from river bed, Senior Deputy Director of Directorate of Geology and Mining is a Competent authority, for short term Temporary permits which is valid for one year, Committee headed by Hon. Collector is Final authority to Approved the District Mining Plan.

As per Minor Mineral Extraction Rules 2013 Rules 70, Disposal of sand from Riverbed, Nallah and creeks by way of public auction, in this regards Govt resolution Gaukhni -10/0615/case No. 289/kha dated 3rd January 2018 is applicable in entire state. As per Enforcement & Monitoring Guidelines for Sand Mining 2020 Sustainable sand mining management guidelines 2016, Standard Environment condition for sand mining and sustainable mining practices, district level survey report should be prepared and area suitable for mining and area prohibited for mining be identified.

**2. Project Description**

- Narne is a small Village in Dharangaon Taluka in Jalgaon District of Maharashtra State, India. It comes under Narne Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 28 KM from District headquarters Jalgaon. The Sand Ghat is 340 KM from State capital Mumbai.
- The sand spot area is connected to approach road at a distance of 766 m in SW direction. Dharangaon Railway Station is present at a distance of 14.25 km.
- Area covered in SOI Toposheet No- 460/8. The GPS reading of boundary point are given below:

**Table 1: Salient Features of the Project**

Items	Details
Location	Village- Narne, Tehsil- Dharangaon District-Jalgaon, Maharashtra.

**Narne sand spot over an extent of 1.26Ha At Girna Riverbed Gut No: Out of 6, Narne Village, Tehsil- Dharangaon, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

Latitude and Longitude	Boundary points of Narne	Latitude	Longitude
	B.P 1	21° 7'56.90"N	75°18'52.34"E
	B.P 2	21° 7'55.55"N	75°18'52.09"E
	B.P 3	21° 7'56.32"N	75°18'47.25"E
	B.P 4	21° 7'56.16"N	75°18'41.91"E
	B.P 5	21° 7'57.52"N	75°18'41.86"E
	B.P 6	21° 7'57.68"N	75°18'47.35"E
	Sand spot area (In Ha)	1.26	
Proposed production capacity (In Brass)	2226		
Manpower Requirement (considering 3-month period)	20 labors + 1 mate + 1 Supervisor=22 manpower		
Infrastructure Requirement (As per Govt Resolution 3rd January 2018)	1. Room / Hut for Official records 2. Electricity / Battery for Running CCTV on 24X 7 daily. 3. One Computer / Android base Mobile for the online generation of Invoice number.		
Water requirement & source	2.4 KLD – Tankers from nearby village.		
Project cost INR (Lakh)	13.35 Lakhs		

### 3. Baseline Environmental Status

#### ❖ Topography

- The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west.
- However, the riverbanks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east northeast -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.

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- South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys.
- The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Erandol, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Raver, Chopda, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Erandol, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.
- The slope of Sand Spot area is towards West side ranging from Contour 170 to 172 from MSL i.e 2m. The Highest contour value is 172 and lower is 170. The flow direction of Girna river is towards West.

❖ **Hydrology**

They will be no change in water table during mining operation, as the depth of mining shall be restricted to 1m water level, which is less likely to affect surface level or ground water table. There is no proposal of any stream modification/diversion due to this mining activity hence there will be no impact on flow of water.

❖ **Soil Environment**

The area is not having any topsoil or fertile soil. The depth of mining shall be restricted to 1m. There is no major impact on soil of the study area due to mining activities.

❖ **Land Use Land Cover**

The project area does not consist of any forest land. It does not consist of any human habitations. Any change in scope of mining as per approved mining plan can lead to bank erosion /cutting and thereby river channel shifting degradation of land, causing loss of properties and degradation of surrounding landscape.

❖ **Water Environment**

- There will not be any wastewater discharges to water bodies from the mining operations. As observed in the river, the thickness of sand to be excavated will be 1m only so there will not be any intersection with ground water table. It is observed from the dug well in the adjacent plain area and in the nearby villages that the ground water table varies depending upon seasonal variations. The depth to water levels in the district ranges from 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL.
- As the mining activities presently proposed are maximum up to 1m that too within the river course and the total mining operation will be achieved through manual means, there will be

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no effect on ground water table. All the stipulations of MoEF for sand mining and guidelines as per the Maharashtra Minor Mineral Extraction [Development and Regulation] Rules, 2013 of Section 15 of MMDR Act 1957 [67 of 1957] will be followed. Hence, impact on water regime due to the proposed sand mining is not anticipated.

- o Precautionary measures will be initiated for closing the operation and shifting the men and transport vehicles prior to onset of monsoon.
- o No oils or lubricants will be discharged in the sand to avoid water pollution.

❖ **Climate**

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year-round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

❖ **Biological Environment**

The project is only of extraction of minor minerals viz. sand from the river quarry.

Flora: The area is completely barren and devoid of any vegetation in the river. Only few thorny bushes are seen on the banks of the river.

Fauna: As there is no forest cover, no wildlife can be seen in this area.

- There will be no significant impact of the river quarry mining project on the biological diversity found in the 5km. radius of the site.
- The mining lease area is in non-forest land i.e., sandy river quarry where presence of fauna is not at all seen. As such, there will be no adverse impact of the manual mining activity on fauna around the mining lease area.
- No adverse impacts will be envisaged on the existing aquatic fauna, on downstream side (away from site) as the mining confined to above water level only and at all touching/disturbing water table.

❖ **Socio-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- The mining operations will provide direct & indirect employment village people.
- The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- Local work force will be given first preference for employment.
- Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area)

**4. Impact assessment report along with proposed mitigation measures.**

Preparation of Environmental Management Plan is required for formulation, implementation, and monitoring of environmental protection measures during and after commissioning of projects. The plan should indicate the details as to how various measures have been proposed to be taken including cost components as may be required.

**1. Land Environment**

The type of mining and the characteristics of the mineral deposit both affect the degree to which mining disturbs the landscape. Sand Mining and allied activities will be done in the



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fluvial plain formed by river meandering. Mining of sand may cause a few environmental degradations.

**a. Anticipated Impacts:**

- ❖ Damage of riverbank due to access ramps to riverbed, may cause soil erosion.
- ❖ Destruction of riverbank hinterland and ecological due to extraction of sand by probability of damage to the flood control bunds (built along the river side) due to heavy movements of vehicles over the bund to approach the mine area and further during transportation for sand from the mine area.
- ❖ Disposal of packing material, carried by the workers, would not be allowed. This packing material would include used sachet/ gutka /pan masala pouches.
- ❖ Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations, borehole users due to dust, noise and it also causes traffic hazards.
- ❖ Surface degradation due to road network.

**b. Mitigation Measures:**

- ❖ Safety distance of 3 meter or 1/10th of the width of the river whichever is more will be left from both the banks of the river (as per "Sustainable sand mining guidelines").
- ❖ No foreign material like polythene bag, jute bag and useless articles should be allowed to remain/spill in riverbed and catchment area, or no pits/pockets will be allowed to be filled with such material.
- ❖ Minimum number of access roads to riverbed for which cutting of riverbanks will be avoided and ramps are to be maintained.
- ❖ Care will be taken to ensure that ponding is not formed in the riverbed.
- ❖ Mining will not exceed beyond the allowed extraction capacity.
- ❖ Green belt will be developed along the haul road and the bank of rivers of mine premises and near the sand mining site. While selecting the plant species, preference will be given for planting native species of the area.

**2. Water Environment**

**a. Anticipated Impacts:**

- ❖ As the project activity is carried out in the dry part of riverbed, none of the project activities will affect the water environment or riverbank habitats. Project activities will not have any adverse effect on the physical components of the environment and therefore may not have any effect on the recharge of ground waters or affect the water quality. Monitoring of water quality will be checked yearly.

**b. Mitigation Measures:**

- ❖ Mining is avoided during the monsoon season and at the time of floods. This will help in replenishment of sand in the riverbed.
- ❖ Mining below subterranean water level will be avoided as safeguard against environmental contamination and over exploitation of resources.
- ❖ River stream will not be diverted to form in active channels.
- ❖ Utmost care will be taken to minimize or control leakage vehicles to be used for sand transportation.
- ❖ The washing of tractor trolleys in the river will be avoided.

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- ❖ The contractor will follow all guidelines and rules for proper and scientific method of mining during the period of extracting the sand.

**3. Air Environment:**

**a. Anticipated Impacts:**

**Due to Haul Road/ Access Road:**

- ❖ Plying of tractor trolleys from public road to river sand collection points needs access roads.
- ❖ Majority of such access roads are the same existing roads/tracks being used by pedestrians/cart owners. Movement of heavy vehicles sometimes causes problems to cattle, agriculture land, and human habitations due to dust, noise and movement of public.
- ❖ These environmental problems are felt more as the area is rural in nature.

**Due to Mining process:**

- ❖ Air pollution is likely to be caused at various stages of sand mining operations such as excavation, loading & transportation of material.
- ❖ Most of the dust will be generated from loading & transportation. This dust becomes air borne and gets carried away to surrounding areas.
- ❖ The impact on air is mainly localized in nature as the dust particles are not carried to longer distances and the effect is felt within the core zone of the project involving active Sand mining operations.

**b. Mitigation Measures:**

**Mitigation of Impacts on Access Roads:**

- ❖ Movement of the vehicles on the road will be increased; however, unmetalled road in the mining area will be sprinkled with water at regular intervals.
- ❖ In addition to prevent spillage by tractor trolleys over loading should be controlled along with speed limit (1Brass /tractor trolley).
- ❖ Maintenance of haul road will be done on regular basis.

**c. For Fugitive Dust Emission:**

- ❖ To avoid fugitive dust emissions at the time of excavation, regular sprinkling of water will be done on regular basis.
- ❖ Sand is transported to the sites by road through tractor trolleys. The sand carrying vehicles shall be covered by tarpaulin sheets.
- ❖ The Green Belt development will be prepared along the haul roads, which will act as a pollution sink.
- ❖ To minimize the vehicular pollution from the sand transporting vehicles, the following conditions will insist to permit the vehicles of the transporters.
- ❖ The vehicles should be (Bharat-IV stage) compliant and should have pollution control certificate (PUC) issued by appropriate authorities.
- ❖ Regular maintenance of transport vehicles and monitoring of vehicular emission levels at periodical intervals.

**4. Noise:**

**a. Anticipated Impacts:**

Noise environment in this project will be affected only by the equipment at the site and vehicular transportation. Since slight increase in noise levels can be expected.

**b. Mitigation Measures:**

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- ❖ Minimum use of Horns at the village area.
- ❖ Timely maintenance of vehicles and their silencers to minimize vibration and Sound.
- ❖ Phasing out of old and worn-out tractor trolleys.
- ❖ Provision of green belts along the road networks.
- ❖ Care will be taken to produce minimum sound during sand loading.
- ❖ Use of Backhoe and ear plugs may be provided to protect the labors working at the site.

**5. Socio-Economic Environment**

This project operation will provide livelihood to the poorest section of the society.

**Anticipated Impacts and Evaluation:**

- ❖ The project activities shall not have any adverse impacts on any of the common property resources of the village communities, as the sand mine lease area is not being used for any purpose by any section of the society in this region.
- ❖ There is no R & R involvement in this project.
- ❖ There is no land acquisition in this project.
- ❖ The results of the field survey conducted to understand the knowledge and perception of the people living around the project area gives a clear idea about the need for the project.
- ❖ A major portion of the houses in the study area are semi- pucca type structures.
- ❖ The water source to these areas is from the municipal connection and private bore wells and wells. The awareness level regarding the proposed mining activity is very high. The proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes.

**a. Social and Demographic Profile:**

The workers are from local villages. These people have been provided all welfare from a lessee like medical benefits, insurance, fees for children's education etc. They have some land and cattle for their daily earnings. Additional income earned from the Sand Mining work will improve their living standard. The group of quarries in and around will help to have infrastructure facilities like roads, schools, shops etc. This will improve their social life.

**b. Occupational Health and Safety:**

This is Riverbed Sand Mine. So, the mining activities are comparatively less because the production is not on large scale. Workers do not come across any extreme condition like excessive heat, moisture etc. Workers working around it may come across this dusty environment. But the impact on health will be within limit.

**c. Human Settlement:**

There are no houses in and around lease area. Blasting is only activity, which may affect the settlement, but settlement is at distance of more than 1.0 Km from the Sand Mining. All the due precautions will be taken during mining. Transport of finished products is through the villages. There will be psychological impact of the traffic on the local people. However, the intensity of traffic is less.

**d. Health and Hygiene:**

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In general, the health of villagers is moderately good. In the rainy season, the atmospheric condition is unhygienic due to lack of proper drainage and sanitation in the village habitation. Villagers are working in agricultural fields and work as laborers.

**e. Education:**

Mostly education is up to middle standard. Economic condition is in general moderate. So, after this project the standard of education will be increase.

**f. Socio Economic Benefits Arising Out of Mining:**

- a. Generation of employment in the rural area.
- b. Improvement in the living standards of the rural people.
- c. Creating of infrastructural facilities like roads, electricity, shops, school etc.
- d. Helping to improve literacy in the area Exploiting natural mineral so generation of revenue.
- e. Helping to sustain construction activity.
- f. Improving the greenery of the area, this is otherwise poor.

**g. Liquid Effluent:**

Not applicable because small mine and impacts are negligible.

**h. Solid Waste:**

Not applicable because small mine and impacts are negligible.

**6. Biological Environment**

**Anticipated Impacts:**

- ❖ Aquatic environment Proposed mining of the dry bed of the river, so no possibility of disturbance of aquatic life.
- ❖ Flora and Fauna, the mining activity will have insignificant effect on the existing flora and fauna. The project area is surrounded with agricultural land. It was found that the sand mining activity will not have any significant impact on the biological environment of the region.

**Mitigation Measures:**

- ❖ Improvement in riverbank stability.
- ❖ Large woody debris in the riparian zone will be left undisturbed or replaced when moved and not be burnt.
- ❖ Vegetative debris will not be stored within the mine lease area.
- ❖ Operation and storage of heavy vehicles within riparian habitat will be restricted.
- ❖ Covering of loaded vehicles to reduce dust emission, which may harm surrounding agricultural crops and other plant species conservation of biological diversity of plants, birds, and animals.
- ❖ Greenbelt Development and Bio-Diversity Preservation Plantation activities will be carried out at the bank of the river and along the haul roads. This activity will help for maintaining ecology and environment of the area.

**5. Project Benefits**

The proposed expansion project will lead to the following benefits:

- Sand is available for Building and Construction work and by regular removal of sand there is no possibility of flood.
- This project will contribute additional revenue to the state Exchequer in the form of revenue.
- The project will result in the employment opportunities to the unskilled/skilled local people.

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Thereby, the quality of life of the employed people will increase.

**6. Sand Ghat Closure Plan**

- ❖ Mining will be avoided during monsoon and floods; this will allow the sand deposit to replenish.
- ❖ Gabion structure will be constructed for the sand to replenish during monsoon season.

S. No	Head	Area put on. use at start of plan [in Ha]	Additional Requirement during Plan period [in Ha]	Total [in Ha]	Area considered as	Net consider for calculation
1	Area under mining / pit	-	1.26	1.26	1.26	1.26
2	Area under dump	NIL	---	---	---	---
3	Infrastructure Workshop Administrative Building etc.	--	--	--	--	--
4	Roads	--	--	--	--	--
5	Mineral reject	--	--	--	--	--
6	Green Belt Plantation /Soil dump	--	--	--	--	--
7	Tailing Dam /pond	--	--	--	--	--
8	Effluent Treatment Plant	--	--	--	--	--
9	Mineral storage	--	--	--	--	--
10	Township area	--	--	--	--	--
11	Other to specify	--	--	--	--	--
<b>GRAND TOTAL</b>			1.26	1.26	1.26	1.26

**7. Planning Brief**

Information required on demand and supply of district (2023-24)			
S.No.	Name of District	Total sand Demand of District in Brass	Total Sand Available in district in Brass
1	Jalgaon	191380	104531

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**8. Compliance of Earlier Environmental Clearance**

Narne sand spot of Narne village of Dharangaon tehsil has got environmental clearance in the year 2020-2021 but the sand ghat didn't get an response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot.

**9. Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020.**

- ❖ District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- ❖ Appropriate feedback and its redressal mechanism shall also be made operational.
- ❖ Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- ❖ Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- ❖ The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- ❖ Printed on Indian Bank Association (IBA) Approved
- ❖ Magnetic Ink Character Recognition Code (MICR) paper
- ❖ Unique Barcode
- ❖ Unique Quick Response Code (QR)
- ❖ Fugitive Ink Background
- ❖ Invisible Ink Mark
- ❖ Void Pantograph
- ❖ Watermark
- ❖ GPS BASED VEHICLE TRACKING SYSTEM
- ❖ CCTV Camera

Cluster certificate with reference to the EIA Notification 2006 amended from time to time with specific remarks on the cluster formation in the periphery of the proposed sand ghat along with area map showing distances between adjoining sand mine areas.

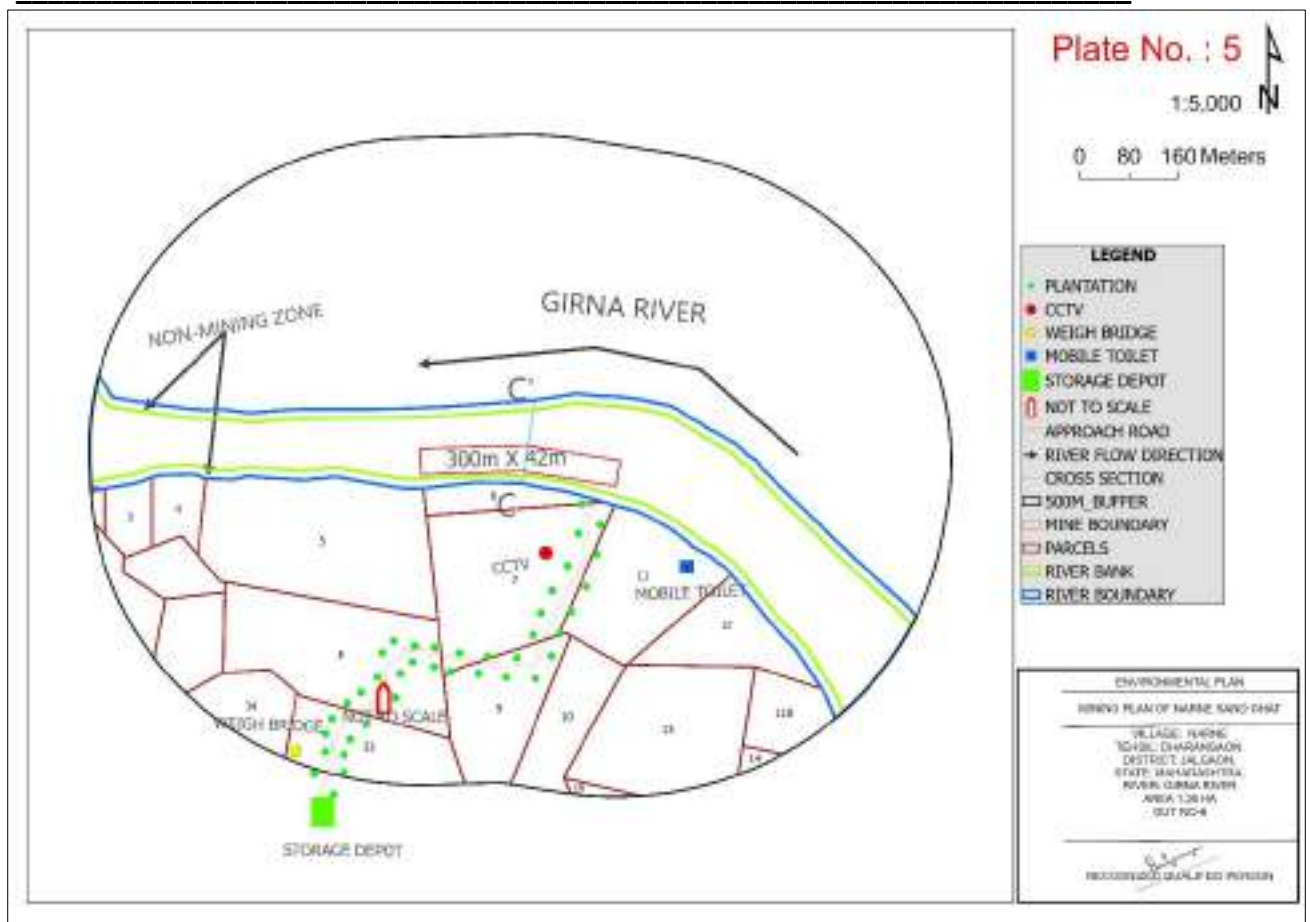
Narne does not form a cluster.

**10. Layout of proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc.**

Proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc. layout is given below:

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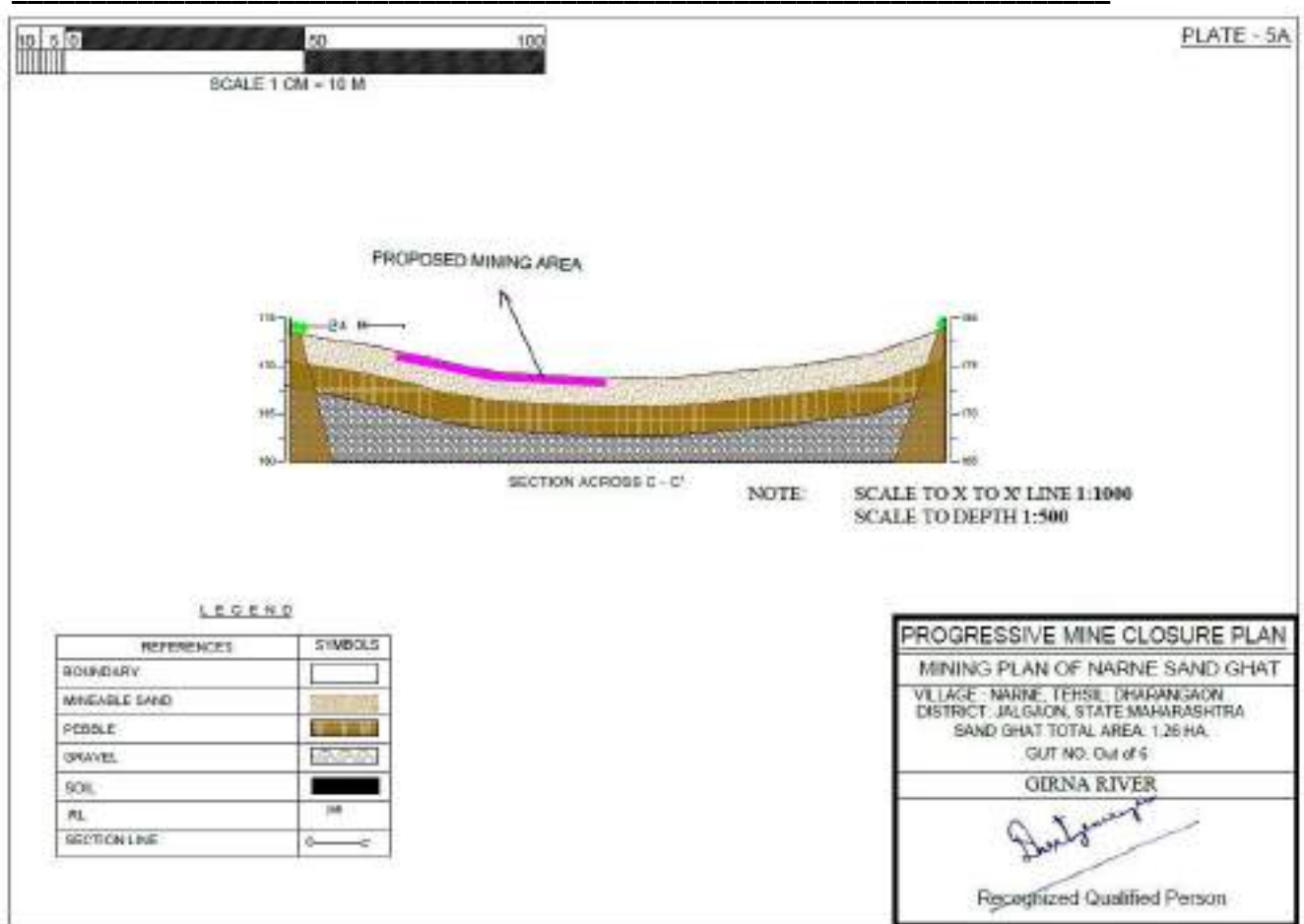
- 11. Proposed approach road for transport of mined sand from sand ghat to the storage area and consent of storage area from the concerned landowners is an after-auction activity to use their land as approach road.**

The proposed approach road length is at 766m, and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the riverbank. Consent of road submitted by Dharangaon Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from landowner.

- 12. Cross -Section of riverbed showing distance of proposed sand mine area from the riverbank and other details as prescribed in the Enforcement & Monitoring Guidelines for sand mining published in January 2020 by MoEF&CC.**

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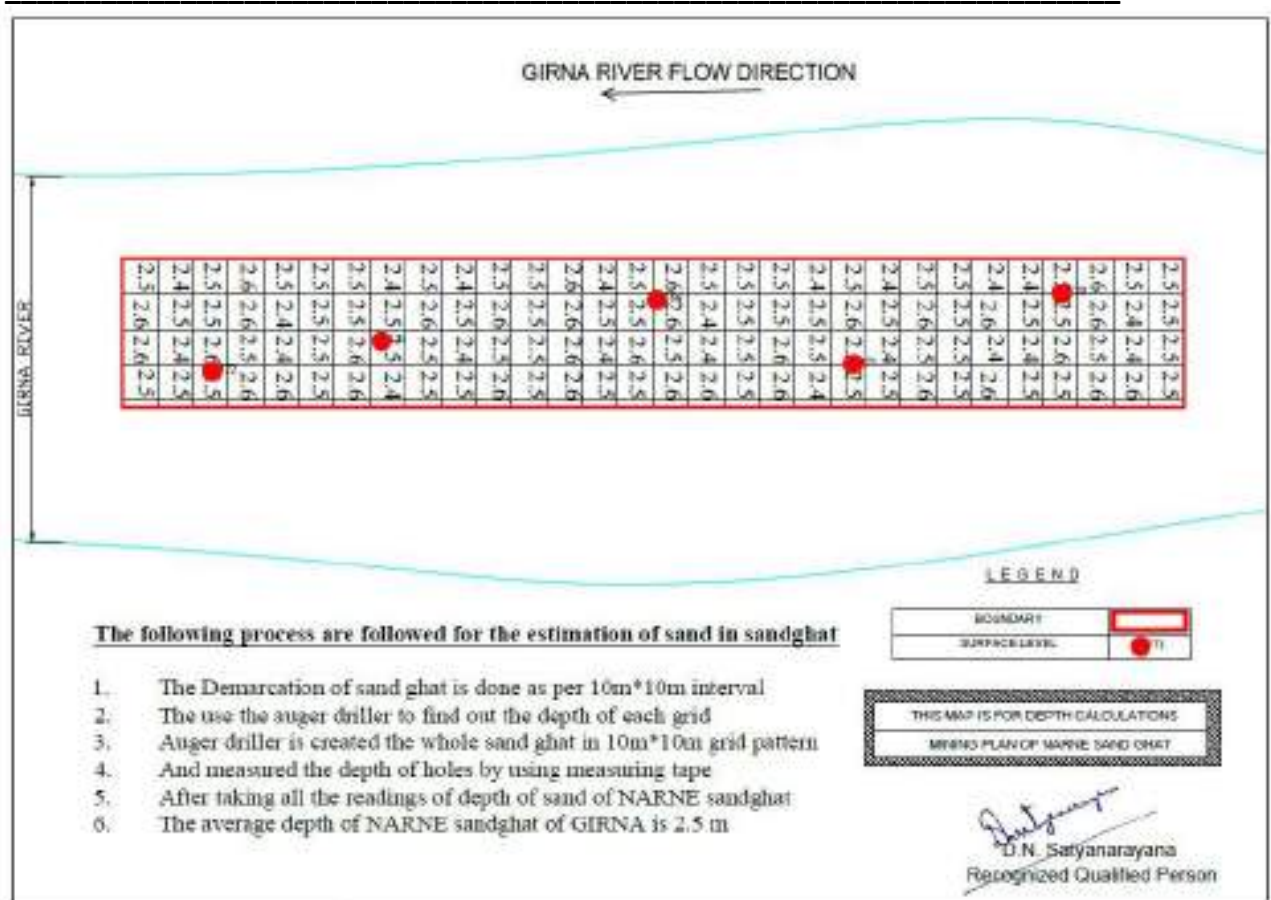
13. Details of District Level Task Force committee meetings and status of compliance of its recommendations if any.

14. Methodology for Sand Mining



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**15. Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.**

**DANDY-BOLTON EQUATION**

For Runoff Less Than 2 Inches

$$S = *1280 * (Q) * 0.46 * (16 - 0.26 \log(A)) * F$$

For Runoff More Than 2 Inches

$$S = *1958 * (Q) * (e^{-0.055 * Q}) * (13 - 0.26 \log(A))$$

Where?

S= sediment yield of stream (t/yr./km<sup>2</sup>),

Q= average annual runoff (m<sup>3</sup>),

A= net drainage area in sq. Mile

The sediment yield of Girna river at Girna dam station is 4.612\*1020 tonnes//year/km<sup>2</sup> by Dandy-Bolton Equation (Source: State Irrigation Department)

**Conclusion:**

As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

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**16. PP to submit details of proposed plantation plan along with its location and requisite permission to be obtained from the Competent Authority.**

Plantation details are presented below:

Location of greenbelt	Both sides of approach road, On the riverbanks of both sides of the sand spot & nearby open areas. Haul Road outside riverbed.
No. of plants to be planted	916
Spacing of plants	4 m grid interval
Species selected	Native species

Tree species recommended for Plantation:

Botanical name	Local name	Importance
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

**17. Budget for Corporate Environment Responsibility (CER)**

About 2% fund of the project cost is allocated for Corporate Environment Responsibility (CER) activities as presented in below Table:

S.No.	Budget Allocated	Budget (In INR)
1	Installation of one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	25000
3	Needed Repairing work with consultation of Grampanchayat	25000

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4	Community Infrastructure Development	70000
Total		2,00,000

**18. Environmental Management Plan (EMP)**

A total capital cost of INR **2,54,000** and recurring cost provision of about INR **2,70,940** has been kept in the project cost towards the environmental protection, control and mitigation measures and implementation of the EMP, this cost is born by bidder / lease holder. The budgetary cost estimate for the EMP is given in Table.

**Table 6: Environmental Budget**

Narne			EMP Budget		
S.No.	Component	Description	Capital cost Rs.	Recurring Cost Rs.	Total Cost in Rs
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	38300	38300
3	Approach Road Maintenance		-	30640	30640
4	Green Belt Plantation	Along the Riverbank	37500	-	37500
		Along the Approach Road	191500	-	191500
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	5000	-	5000
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	30000	30000
7	Security	Display Boards and other security measures	10000	-	10000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health check-up (1000Rs./ Employee)	-	22000	22000
9	Tarpaulin Cover (5000 INR per one Cover)		10000	-	10000
<b>Total</b>			<b>254000</b>	<b>270940</b>	<b>524940</b>

**19. Public Consultation Report**

Dharangaon					
S. No	Villager Name/Village, Taluka	Type of Person (Villager/Government)	Query raised by the Villager/Official	Response from the Proponent	Action Plan

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**Environmental Management Plan**

		Official)			

**20. Summary and Conclusion**

The environmental status of the project site and study area of 10 km radius is delineated with respect to air, noise, water, land, biological and socio-economic environment the different project activities in the construction and operation phases are identified. To identify the impacts, the interaction between the project activities and different components of the environment are classified phase wise. A summary of the identified impacts is given in the following paragraphs.

During the operational phase, transportation of sand could cause a temporary disturbance to local environment which will be prevented with the proposed mitigation measures proposed in Point no. 4.

Proposed project will not have any major significant negative impacts. The minor impacts arising out during Excavation and Transportation phases can be mitigated with the help of the proposed Environmental Management Plan.

In general, Sand excavation from Narne Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

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The Narne Sand Spot is situated at Village Narne, Taluka Dharangaon, District- Jalgaon. Sand Spot is 1.26 HA of area in Gut No. out of 6 of Narne village of Dharangaon Tehsil, Jalgaon district. Detail of the project is summarised below,

- ❖ District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- ❖ District Collector Jalgaon appointed M/s Integrated Precision Systems & Services Pvt. Ltd., for preparation of Mining Plan and grant of environmental clearance.
- ❖ Applicant proposed to auction the said Sand Spot over an area of 1.26 Ha area and identified for preparation of mining plan and for grant of Environmental Clearance.
- ❖ Mining Plans are prepared by Recognized Qualified Person and approved by Directorate of Geology & Mining Govt. of Maharashtra.
- ❖ About 2226 brass sand is proposed to auction from proposed sand spot.
- ❖ Proposed site is located at the Girna riverbank.

### 1. Physiography

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west.
- ❖ However, the riverbanks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east northeast -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys.
- ❖ The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Erandol, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Raver, Chopda, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Erandol, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.
- ❖ The slope of Sand Spot area is towards West side ranging from Contour 170 to 172 from MSL i.e 2m. The Highest contour value is 172 and lower is 170. The flow direction of Girna river is towards West.

### 2. Local Geology

The local geology is Sand of various size up to depth of 2.5- 3 meter.

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**3. Details of Exploration**

- ❖ There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the riverbed.
- ❖ Mining - The mining will be continued with present method of open cast mining by cutting slice of 1 m of Sand along topo-relief, by advancing from NE to SW direction as per allotted area by auction. The production can be at the rate of 6300 Cu.m or 2226 brass i.e., 1 year from the date of mining plan approval, the size of pit at the end will be 1.26HA.

**4. Introduction of the project/ background information**

The Narne Sand Spot has been kept for Auction, which is situated at Village Narne, Taluka Dharangaon, and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

**5. Brief description of project**

- ❖ The Sand Spot has sufficient Reserve of Sand to work at 6300 Cu.m for a specified period mentioned i.e., 1 year from date mining plan approval.
- ❖ The mining will continue with opencast method of Mining by cutting 1 m area of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of labourers into the tractor having capacity of 1 Brass for transport of Sand-to-sand depot from there to the various dealer sites located outside Sand Spot area.

**6. Need for the project.**

The Sand or Sand Spot under reference is aimed at exploring Sand as ROM in various sizes i.e., fine to Coarse grain which is Transported to consumer site in outside Sand Spot area, for the infrastructure development i.e., Construction activity to produce Concrete for putting in the floor, roof- slabs, Column, Pillars, Bridges & Dam construction.

**7. Project Description**

This mining project is an independent project and not an interlinked project.

**8. Location**

- ❖ Narne is a small Village in Dharangaon Taluka in Jalgaon District of Maharashtra State, India. It comes under Narne Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 28 KM from District headquarters Jalgaon. The Sand Ghat is 340 KM from State capital Mumbai.
- ❖ The sand spot area is connected to approach road at a distance of 766 m in SW direction. Dharangaon Railway Station is present at a distance of 14.25 km.
- ❖ Area covered in SOI Toposheet No- 460/8.

**9. The boundary pillars of Sand Spot area are given below with GPS values.**

Boundary points of Narne	Latitude	Longitude
B.P 1	21° 7'56.90"N	75°18'52.34"E

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B.P 2	21° 7'55.55"N	75°18'52.09"E
B.P 3	21° 7'56.32"N	75°18'47.25"E
B.P 4	21° 7'56.16"N	75°18'41.91"E
B.P 5	21° 7'57.52"N	75°18'41.86"E
B.P 6	21° 7'57.68"N	75°18'47.35"E

**10. Alternate Sites**

No alternate site is proposed.

**11. Magnitude of Operation**

Proposed period for mining of sand will be decided by the office of district collectorate 6300 cu.m. will be excavated during the period.

**12. Project description-mining details**

- ❖ The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 300m L X 42m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable.
- ❖ The Sand Spot has sufficient Reserve of Sand to work at 6300 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.
- ❖ The mining will continue with opencast method of Mining by cutting 1 m slice of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of laborer's into the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**13. Raw material, marketing & transport of ore**

The proposed sand spot will be auctioned, and successful bidder will be responsible for carrying out mining operations as per environmental terms and conditions, approved mining method as per approved mining plan and other terms and conditions. The loading of Sand generated to the tractor/tipper/dumpers will be done by loaders & material transported to the Dealer site.

**14. Resource optimization, recycle, reuse.**

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

**15. Water & energy requirement**

The major water requirement in the lease area is for dust suppression and for drinking use. The total water requirement is estimated as 4.4 KLD the required water for dust suppression can be arranged through tankers from nearby village and drinking water will be provided in earthen pots for labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

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**16. Quantity of waste & scheme for management**

There will not be any waste generation within the lease area.

**17. Schematic Representations**

It is a proposal of opencast manual sand mining from riverbed. Mining plan is approved by the competent authority.

**18. Site Analysis**

**Connectivity**

Narne is a small Village in Dharangaon Taluka in Jalgaon District of Maharashtra State, India.

The sand spot area is connected to approach road at a distance of 766 m in SW direction. Dharangaon Railway Station is present at a distance of 14.25 km.

**19. Land Use, form & Ownership**

The ultimate land use pattern for the lease area of 1.26ha. will be consisting of

Mining Area : 1.26ha.

Construction of Temporary Roads: 0.00 ha.

Total : 1.26ha.

At present ownership of this sand spot area is in the hand of Govt. of Maharashtra, after approval of mining plan and EC quarry area will be transfer to bidder after auction.

**20. Geology**

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

**21. Existing land use pattern**

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

**22. Social-Economic Environment**

- ❖ Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:
- ❖ The mining operations will provide direct & indirect employment village people.
- ❖ The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- ❖ Local work force will be given first preference for employment.
- ❖ Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area).

**23. Planning brief:**

The proposed project is opencast manual sand mining activity.

**Supply demand ratio:**

Information required on demand and supply of district (2023-24)



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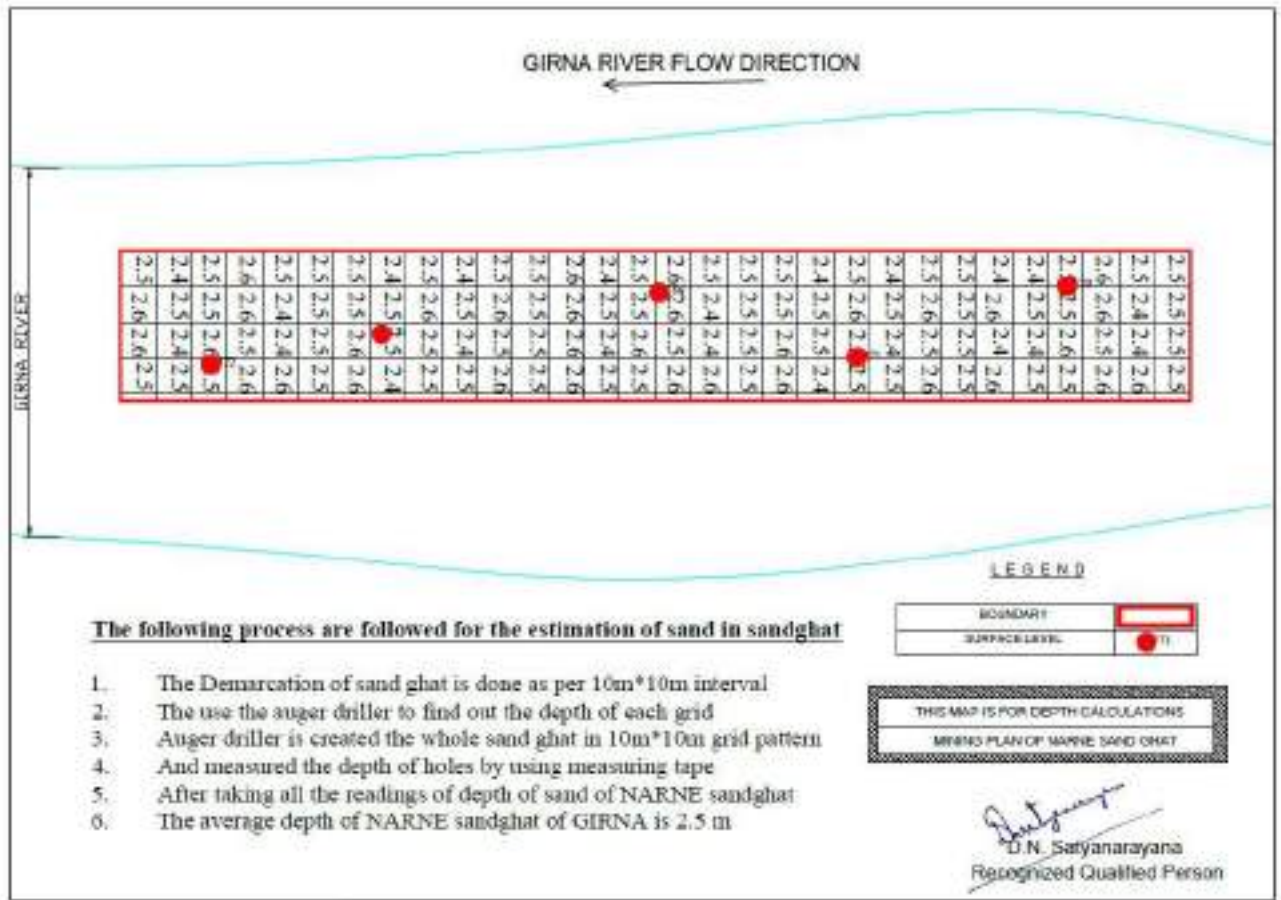
Name of District	Total sand Demand of District in Brass	Total Sand Available of district in Brass
Jalgaon	191380	104531

**24. Replenishment:**

- ❖ Area of deposition and erosion was calculated for each cross-section after giving due regard to stability & safety of active channel banks & other features of importance.
- ❖ DGPS and other survey tools have been used to define topography, contours and offsets of lease area.
- ❖ Contour & elevation benchmarks are provided with the baseline data for assessing pre- and post-study period scenario.
- ❖ Physical benchmarks are fixed at intervals (1 in 30 m) & Reduced Levels (RL) are validated from a nearby standard RL.
- ❖ These RL are engraved on a steel plate (Bench Plate) & are fixed & placed at locations which are free from any damages & are available in pre- and post-study period.
- ❖ Bench plates are available for use during the mining period as reference for all mining activity.
- ❖ Baseline data on elevation status for a grid of 10 m x 10 m is taken to ensure the accuracy in the assessment.
- ❖ It was made sure that two consecutive cross-sections in longitudinal and lateral direction is not more than 10-meter distance apart.
- ❖ Changes have been observed in the elevation in pre and post scenario at each node and were depicted in graphical forms with an appropriate scale for estimating the area of deposition & erosion.
- ❖ Elevation level was placed in reference to the nearest bench-plates established for the purpose.
- ❖ The levels (MSL & RL) of corner point of each grid were identified and safety barriers (non-Mining) are demarcated as restricted in consensus with Mineral Concession Rules of respective State, and the provision mentioned in this Sustainable Sand Mining Management Guidelines.
- ❖ A clear identification was highlighted between grids under mineable and grids under the non-mineable area. These baseline data (pre and post) was subjected to stimulation with the help of data mine software to derive at the replenishment area and corresponding volume and estimated weight.
- ❖ The database was structured in a tabulated form clearly depicting the nomenclature of the section lines, latitude and longitude of the starting point, chainage and respective levels of all the points taken on that section line.
- ❖ Net area was derived after summation of area of deposition minus area of erosion for each cross-section.
- ❖ Volume was estimated by multiplying distance between two cross-sections with average of net area of these two consecutive cross-sections.
- ❖ One sample per 900 square meters (30 m x 30 m) was preferred for sample density for assessment of bulk density for estimation of deposition rate.
- ❖ Care was taken that the sample for assessment of bulk density is taken from the deposition zone & not from erosion.

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26. Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.



**27. DANDY-BOLTON EQUATION**

For Runoff Less Than 2 Inches

$$S = 1280 * (Q) * 0.46 * (1.46 - 0.26 \log(A)) * F$$

For Runoff More Than 2 Inches

$$S = 1958 * (Q) * (e^{-0.055 * Q}) * (1.43 - 0.26 \log(A))$$

Where?

S= sediment yield of stream (t/yr./km<sup>2</sup>),

Q= average annual runoff (m<sup>3</sup>),

A= net drainage area in sq. mile

The sediment yield of Girna river at Girna dam station is 4.612\*10<sup>20</sup> tonnes//year/km<sup>2</sup> by Dandy-Bolton Equation (Source: State Irrigation Department)

**Conclusion:**

As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**Narne sand spot over an extent of 1.26Ha At Girna Riverbed Gut No: Out of 6, Narne  
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**28. Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020**

- ❖ District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- ❖ Appropriate feedback and its redressal mechanism shall also be made operational.
- ❖ Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- ❖ Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- ❖ The recommendation may also include action under the provision of E(P) Act, 1986.

**29. It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:**

- ❖ Printed on Indian Bank Association (IBA) Approved
- ❖ Magnetic Ink Character Recognition Code (MICR) paper
- ❖ Unique Barcode
- ❖ Unique Quick Response Code (QR)
- ❖ Fugitive Ink Background
- ❖ Invisible Ink Mark
- ❖ Void Pantograph
- ❖ Watermark
- ❖ CCTV at mine lease site
- ❖ GPS Based Vehicle Tracking System
- ❖ The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided outside Sand Spot area.

**30. Compliance of earlier Environmental Clearance**

Narne sand spot of Narne village of Dharangaon tehsil has got environmental clearance in the year 2020-2021 but the sand ghat didnt get an response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot.

**31. Proposed Infrastructure**

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided in outside Sand Spot area.

**32. R&R Plan**

R&R is not involved.

**33. Project schedule**

Period of mining for the proposed sand spot will be decided by the Office of District Collectorate.

**34. Analysis of Proposal**

Description of the project included in items 1-10 above indicates the following:

- ❖ It is proposed for opencast manual river sand mining.
- ❖ Opencast mining without hampering the present environmental quality of the area.

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- ❖ Income to local people is uncertain & initiation of mining will ensure regular income to local people.

**35. Costing**

Costing parameters will be decided by the District Authorities.

**36. Compliance to Environment Clearance**

Whether there are any serious violation of safety rules and regulation which may jeopardize human health and safety. If so, give details of violations and state the steps proposed to be taken with the time scheduled to rectify the violations:

No, there are not any serious violation of safety rules and regulation, which may jeopardize human health and safety. The applicant has given a commitment in this effect and undertaking also given to follow and implement, as specified in the mining plan. The applicant is undertake to abide and implement any special conditions imposed by various authorities and also to complete formalities under provision of the Mines & Mineral (Development & Regulation) Act, 1957 and the Bombay Minor Mineral rules, the Mineral Conservation and Development Rules, 1988 as amended, the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule 2013, MoEF & CC Notification S.O. 141 (E) dated 15th January 2016, and MoEF & CC Sustainable Sand Mining Management Guidelines 2016, Sustainable Sand Mining Management Guidelines 2019, Sand Mining Policy 2020

**37. Any Other Information:**

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed, and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule-2013, MoEF & CC Notification S.O. 141 (E) dated 15<sup>th</sup> January 2016, and MoEF & CC Sustainable Sand Mining Management Guidelines 2016, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.05.1994 and 04.09.2006.

**Risk Assessment for Narne Sand Spot**

**1. Introduction**

A main principle of risk assessment is that it should take place before any changes are made. Risks should be assessed and control measures are put into action before new work is introduced or systems are changed. The process should influence budgets and allocation of resources, rather than being an afterthought when the decisions have already been made.

The risk management process is continuous, with well-defined steps that support better decision making by contributing greater insight into risks and their impacts. Risks from all sources are identified and once they pass the materiality threshold, a formal process begins in which causal factors and consequences are identified and the correlation with other risks and the current risk mitigating strategy is reviewed. One of the challenges is to ensure that mitigating strategies are geared to deliver reliable and timely risk information to support better decision-making.



The mining operations at NARNE SAND SPOT are subjected to the risks and hazards normally encountered in open-cast mining operations. These risks include operational risks relating to

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materials handling, accidents, removing material from quarry area. Mining processes also rely on key inputs, for example fuel. Appropriate insurance can provide protection from some, but not all, the costs that may arise from unforeseen events. If any of these risks should materialize, such an event could result in serious harm to employees and contractors, delays in production, increased production costs and possible increase in liabilities.

Disruption to the supply of key inputs, or changes in their pricing, may have a material and adverse impact on NARNE SAND SPOT asset values, costs, earnings and cash flows. Failure to meet production target results in increased unit costs. The impact is more pronounced at operations with a high level of fixed costs. Mitigation strategies include efforts to secure strategic supplies at competitive prices, energy reduction, and application of group water management guidelines, adoption of lean production principles and practices and business improvement initiatives to reduce unit costs.

There are certain aspects which should be taken care of, in a quarrying plan with accordance of risk management.

<b>Components</b>	<b>Risk Involved</b>
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
Fire	Only trucks and tractors will make use of diesel for transportation. Diesel is not so highly inflammable but accidental fires can take place.
Road Accidents	Vehicles are used for transporting the material from quarry area to the buyer's location. Due to some improper maintenance of the vehicle a road accident can occur leading to fatal results.

To minimize the risk, certain measures can be taken like implying safety rules, facilities of basic first aid near the site and having training for the workers about personal safety.

Disaster Management Plan is envisaged with a goal to prevent hazards and accidents at work places by careful design, operation, and maintenance of equipment's. All safety precautions and provisions of Metalliferous Mines Regulation-1961 will be strictly followed. Suitable control measures will be adopted to take care of hazards/disasters that may occur during mining operation.

- No mining activities during rainy days or just after heavy rain.
  - Fire fighting, first aid provisions & safety appliances will be made available to the staff and their use regularly checked
  - Regular maintenance of all haulage roads & mining machinery as per manufacturer's guidelines will be done
-

**APPENDIX VIII  
(See paragraph 6)**

**FORM 1 M**

**APPLICATION FOR MINING OF MINOR MINERALS UNDER CATEGORY 'B2' FOR LESS THAN AND EQUAL TO FIVE HECTARE**

**(I) Basic Information**

(i) Name of the Mining Lease site: Pilkhede Sand Spot

(ii) Location / site (GPS Co-ordinates):

<b>Boundary Points Pilkhede</b>	<b>Latitude</b>	<b>Longitude</b>
BP1	21° 7'28.69"N	75°27'25.44"E
BP2	21° 7'28.15"N	75°27'19.85"E
BP3	21° 7'31.03"N	75°27'19.54"E
BP4	21° 7'31.57"N	75°27'25.13"E

(iii) Size of the Mining Lease (Hectare): 1.4418HA

(vi) Capacity of Mining Lease (TPA): 2547 Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 15.28 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, Maharashtra

**(II) Environmental Sensitivity**

<b>S. No.</b>	<b>Areas</b>	<b>Distance in Kilometer/Details</b>
1	Distance of project site from nearest rail or road bridge over the concerned River, Rivulet, Nallah etc.	Bridge on Highway, 7.6Km, SW
2	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road Any Other Road	Jalgaon Railway station, 17.5 Km, SE NH6 12.62Km, S SH, 454Km, N

**Pilkhede sand spot over an extent of 1.4418Ha At Girna River Bed Gut No.3 & 6, Pilkhede Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

Form 1M

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	Electric transmission line pole or tower Canal or check dam or reservoirs or lake or ponds In-take for drinking water pump house Intake for Irrigation canal pumps	ET, 0.5Km, N Nil Nil Nil
3	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil
4	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Water bodies: this is the case of river sand mining in Girna River bed; RF,11.3Km, S
5	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil
6	Inland, coastal, marine or underground waters	Girna River bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	NH6 10.5Km, N SH185, 6.47Km, SW
9	Defense installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Philkhede, 287m, N
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	School 0.5Km, N District Civil Hospital, Kanalde 7.3 Km, SE
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Girna River Bed ( this is the case of river sand mining) RF,11.3Km, S
13	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil
14	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides,	The mine lease area falls in Seismic Zone III (Moderate), according to the Indian Standard Seismic Zoning Map.



**Pilkhede sand spot over an extent of 1.4418Ha At Girna River Bed Gut No.3 & 6, Pilkhede Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

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	erosion, flooding or extreme or adverse climatic conditions)	
15	Is proposed mining site located over or near fissure / fracture for ground water recharge	No
16	Whether the proposal involves approval or clearance under the following Regulations or Acts, namely:- (a) The Forest (Conservation) Act, 1980; (b) The Wildlife (Protection) Act, 1972; (c) The Coastal Regulation Zone Notification, 2011. If yes, details of the same and their status to be given.	No
17	Forest land involved (hectares)	Nil
18	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Orders or directions of the Court, if any, and its relevance with the proposed project.	Nil

***Pilkhede sand spot over an extent of 1.4418Ha At Girna River Bed Gut No.3 & 6, Pilkhede Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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## **ENVIRONMENTAL MANAGEMENT PLAN**

### **1 Introduction**

Ministry of Environment, Forest & Climate Change (MoEF&CC) Notification 2006 and Sustainable Sand Mining Management Guidelines 2016 and as per provision in Mines and Minerals (Development and Regulation) Act 1957 Schedule 60 section 15, Govt Of Maharashtra makes a Minor Mineral Extraction Rules 2013 to extract all the minor mineral in scientific way so that there is no adverse impact on Environment and Climate. To extract every minor mineral from any land (either Government or Private) there is provision of mining plan which is approved by competent authority; For long term leased minor mineral (5 – 10 years period) and Sand excavation from river bed, Senior Deputy Director of Directorate of Geology and Mining is a Competent authority, for short term Temporary permits which is valid for one year, Committee headed by Hon. Collector is Final authority to Approved the District Mining Plan.

As per Minor Mineral Extraction Rules 2013 Rules 70, Disposal of sand from River bed, Nallah and creeks by way of public auction, in this regards Govt resolution Gaukhni -10/0615/case No. 289/kha dated 3rd January 2018 is applicable in entire state. As per Enforcement & Monitoring Guidelines for Sand Mining 2020 Sustainable sand mining management guidelines 2016, Standard Environment condition for sand mining and sustainable mining practices, district level survey report should be prepared and area suitable for mining and area prohibited for mining be identified.

### **2 Project Description**

Pilkhede is a small Village in Jalgaon Taluka in Jalgaon District of Maharashtra State, India. It comes under Pilkhede Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 16KM towards N from District headquarters Jalgaon. The Sand Ghat is 341KM from State capital Mumbai.

The sand spot area is connected to approach road at a distance of 555m in South direction. Jalgaon Railway Station is present at a distance of 10km.

Area covered in SOI Toposheet No- 46P/8. The GPS reading of boundary point are given below:

**Pilkhede sand spot over an extent of 1.4418Ha At Girna River Bed Gut No.3 & 6, Pilkhede Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

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**Table 1: Salient Features of the Project**

Items	Details															
Location	Village- Pilkhede, Tehsil- Jalgaon District-Jalgaon, Maharashtra.															
Latitude and Longitude	<table border="1"> <thead> <tr> <th>Boundary Points Pilkhede</th> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td>BP1</td> <td>21° 7'28.69"N</td> <td>75°27'25.44"E</td> </tr> <tr> <td>BP2</td> <td>21° 7'28.15"N</td> <td>75°27'19.85"E</td> </tr> <tr> <td>BP3</td> <td>21° 7'31.03"N</td> <td>75°27'19.54"E</td> </tr> <tr> <td>BP4</td> <td>21° 7'31.57"N</td> <td>75°27'25.13"E</td> </tr> </tbody> </table>	Boundary Points Pilkhede	Latitude	Longitude	BP1	21° 7'28.69"N	75°27'25.44"E	BP2	21° 7'28.15"N	75°27'19.85"E	BP3	21° 7'31.03"N	75°27'19.54"E	BP4	21° 7'31.57"N	75°27'25.13"E
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Sand spot area (In Ha)	1.4418															
Proposed production capacity (In Brass)	2547															
Manpower Requirement (considering 3-month period)	22 labours +1 mate + 1Supervisor=24manpower															
Infrastructure Requirement (As per Govt Resolution 3rd January 2018)	<ol style="list-style-type: none"> <li>1. Room / Hut for Official records</li> <li>2. Electricity / Battery for Running CCTV on 24X 7 daily.</li> <li>3. One Computer / Android base Mobile for the online generation of Invoice number.</li> </ol>															
Water requirement & source	6.2 KLD – Tankers from nearby village.															
Project cost INR (Lakh)	15.28 Lakhs															

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**3 Baseline Environmental Status**

**i. Topography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Amalner, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Amalner, Jalgaon, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Amalner, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 180 to 184 from MSL i.e 4m. The Highest contour value is 184 and lower is 180. The flow direction of GIRNA river is towards SW

**ii. Hydrology**

The will be no change in water table during mining operation, as the depth of mining shall be restricted to 0.5m water level, which is less likely to affect surface level or ground water table. There is no proposal of any stream modification/diversion due to this mining activity hence there will be no impact on flow of water.

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**iii. Soil Environment**

The area is not having any top soil or fertile soil. The depth of mining shall be restricted to 0.5m. There is no major impact on soil of the study area due to mining activities

**iv. Land Use Land Cover**

The project area does not consist of any forest land. It does not consist of any human habitations. Any change in scope of mining as per approved mining plan can lead to bank erosion /cutting and thereby river channel shifting degradation of land, causing loss of properties and degradation of surrounding landscape.

**v. Water Environment**

There will not be any waste water discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 0.5m only so there will not be any intersection with ground water table. It is observed from the dug well in the adjacent plain area and in the nearby villages that the ground water table varies depending upon seasonal variations. The depth to water levels in the district ranges from 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 0.5m that too within the river course and the total mining operation will be achieved through manual means, there will be no effect on ground water table. All the stipulations of MoEF for sand mining and guidelines as per the Maharashtra Minor Mineral Extraction [Development and Regulation] Rules, 2013 of Section 15 of MMDR Act 1957 [67 of 1957] will be followed. Hence, impact on water regime due to the proposed sand mining is not anticipated.

1. Precautionary measures will be initiated for closing the operation and shifting the men and transport vehicles prior to onset of monsoon.
2. No oils or lubricants will be discharged in the sand to avoid water pollution.

**vi. Climate**

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

**vii. Biological Environment**

The project is only of extraction of minor minerals viz. sand from the river quarry.

Flora: The area is completely barren and devoid of any vegetation in the river. Only few thorny bushes are seen on the banks of the River.

Fauna: As there is no forest cover, no wild life can be seen in this area.

1. There will be no significant impact of the river quarry mining project on the biological diversity found in the 5km. radius of the site.

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2. The mining lease area is in non-forest land i.e. sandy river quarry where presence of fauna is not at all seen. As such, there will be no adverse impact of the manual mining activity on fauna around the mining lease area.

3. No adverse impacts will be envisaged on the existing aquatic fauna, on downstream side (away from site) as the mining confined to above water level only and at all touching/disturbing water table.

**viii. Socio-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

A. The mining operations will provide direct & indirect employment village people.

B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.

C. Local work force will be given first preference for employment.

D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area)

**4 Impact assessment report along with proposed mitigation measures.**

Preparation of Environmental Management Plan is required for formulation, implementation, and monitoring of environmental protection measures during and after commissioning of projects. The plan should indicate the details as to how various measures have been proposed to be taken including cost components as may be required.

**1. Land Environment**

The type of mining and the characteristics of the mineral deposit both affect the degree to which mining disturbs the landscape. Sand Mining and allied activities will be done in the fluvial plain formed by river meandering. Mining of sand may cause a few environmental degradations.

**a. Anticipated Impacts:**

- ❖ Damage of riverbank due to access ramps to riverbed, may cause soil erosion.
- ❖ Destruction of river bank hinterland and ecological due to extraction of sand by probability of damage to the flood control bunds (built along the river side) due to heavy movements of vehicles over the bund to approach the mine area and further during transportation for sand from the mine area.
- ❖ Improper disposal of packing material, carried by the workers like used sachet/ gutka /pan masala pouches.
- ❖ Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations, borehole users due to dust, noise and it also causes traffic hazards.
- ❖ Surface degradation due to road network.

**b. Mitigation Measures:**

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- ❖ Safety distance of 3 meter or 1/10th of the width of the river whichever is more will be left from both the banks of the river (as per “Sustainable sand mining guidelines”).
- ❖ No foreign material like polythene bag, jute bag and useless articles should be allowed to remain/spill in river bed and catchment area, or no pits/pockets will be allowed to be filled with such material.
- ❖ Minimum number of access roads to river bed for which cutting of river banks will be avoided and ramps are to be maintained.
- ❖ Care will be taken to ensure that ponding is not formed in the river bed.
- ❖ Mining will not exceed beyond the allowed extraction capacity.
- ❖ Green belt will be developed along the haul road and the bank of rivers of mine premises and near the sand mining site. While selecting the plant species, preference will be given for planting native species of the area.

**3. Water Environment**

**a. Anticipated Impacts:**

- ❖ As the project activity is carried out in the dry part of river bed, none of the project activities will affect the water environment or riverbank habitats. Project activities will not have any adverse effect on the physical components of the environment and therefore may not have any effect on the recharge of ground waters or affect the water quality. Monitoring of water quality will be checked yearly.

**b. Mitigation Measures:**

- ❖ Mining is avoided during the monsoon season and at the time of floods. This will help in replenishment of sand in the riverbed.
- ❖ Mining below subterranean water level will be avoided as safeguard against environmental contamination and over exploitation of resources.
- ❖ River stream will not be diverted to form in active channels.
- ❖ Utmost care will be taken to minimize or control leakage vehicles to be used for sand transportation.
- ❖ The washing of tractor trolleys in the river will be avoided.
- ❖ The contractor will follow all guidelines and rules for proper and scientific method of mining during the period of extracting the sand.

**4. Air Environment:**

**a. Anticipated Impacts:**

**Due to Haul Road/ Access Road:**

- ❖ Plying of tractor trolleys from public road to river sand collection points needs access roads.
- ❖ Majority of such access roads are the same existing roads/tracks being used by pedestrians/cart owners. Movement of heavy vehicles sometimes causes problems to cattle, agriculture land, and human habitations due to dust, noise and movement of public.
- ❖ These environmental problems are felt more as the area is rural in nature.

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**Due to Mining process:**

- ❖ Air pollution is likely to be caused at various stages of sand mining operations such as excavation, loading & transportation of material.
- ❖ Most of the dust will be generated from loading & transportation. This dust becomes air borne and gets carried away to surrounding areas.
- ❖ The impact on air is mainly localized in nature as the dust particles are not carried to longer distances and the effect is felt within the core zone of the project involving active Sand mining operations.

**b. Mitigation Measures:**

**Mitigation of Impacts on Access Roads:**

- ❖ Movement of the vehicles on the road will be increased; however, unmetalled road in the mining area will be sprinkled with water at regular intervals.
- ❖ In addition to prevent spillage by tractor trolleys over loading should be controlled along with speed limit (1Brass /tractor trolley).
- ❖ Maintenance of haul road will be done on regular basis.

**c. For Fugitive Dust Emission:**

- ❖ To avoid fugitive dust emissions at the time of excavation, regular sprinkling of water will be done on regular basis.
- ❖ Sand is transported to the sites by road through tractor trolleys. The sand carrying vehicles shall be covered by tarpaulin sheets.
- ❖ The Green Belt development will be prepared along the haul roads, which will act as a pollution sink.
- ❖ To minimize the vehicular pollution from the sand transporting vehicles, the following conditions will insist to permit the vehicles of the transporters.
- ❖ The vehicles should be (Bharat-IV stage) compliant and should have pollution control certificate (PUC) issued by appropriate authorities.
- ❖ Regular maintenance of transport vehicles and monitoring of vehicular emission levels at periodical intervals.

**5. Noise:**

**a. Anticipated Impacts:**

Noise environment in this project will be affected only by the equipment at the site and vehicular transportation. Since slight increase in noise levels can be expected.

**b. Mitigation Measures:**

- ❖ Minimum use of Horns at the village area.
- ❖ Timely maintenance of vehicles and their silencers to minimize vibration and Sound.
- ❖ Phasing out of old and worn-out tractor trolleys.
- ❖ Provision of green belts along the road networks.
- ❖ Care will be taken to produce minimum sound during sand loading.
- ❖ Use of Backhoe and ear plugs may be provided to protect the labors working at the site.



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**6. Socio-Economic Environment**

This project operation will provide livelihood to the poorest section of the society.

**Anticipated Impacts and Evaluation:**

- ❖ The project activities shall not have any adverse impacts on any of the common property resources of the village communities, as the sand mine lease area is not being used for any purpose by any section of the society in this region.
- ❖ There is no R & R involvement in this project.
- ❖ There is no land acquisition in this project.
- ❖ The results of the field survey conducted to understand the knowledge and perception of the people living around the project area gives a clear idea about the need for the project.
- ❖ A major portion of the houses in the study area are semi- pucca type structures.
- ❖ The water source to these areas is from the municipal connection and private bore wells and wells. The awareness level regarding the proposed mining activity is very high. The proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes.

**a. Social and Demographic Profile:**

The workers are from local villages. These people have been provided all welfare from a lessee like medical benefits, insurance, fees for children's education etc. They have some land and cattle for their daily earnings. Additional income earned from the Sand Mining work will improve their living standard. The group of quarries in and around will help to have infrastructure facilities like roads, schools, shops etc. This will improve their social life.

**b. Occupational Health and Safety:**

This is Riverbed Sand Mine. So, the mining activities are comparatively less because the production is not on large scale. Workers do not come across any extreme condition like excessive heat, moisture etc. Workers working around it may come across this dusty environment, which can be managed by providing face mask.

**c. Human Settlement:**

There are no houses in and around lease area. All the due precautions will be taken during mining. Transport of finished products is through the villages. There will be psychological impact of the traffic on the local people. However, the intensity of traffic is less.

**d. Health and Hygiene:**

In general, the health of villagers is moderately good. In the rainy season, the atmospheric condition is unhygienic due to lack of proper drainage and sanitation in the village habitation. Villagers are working in agricultural fields and work as laborers.

**e. Education:**

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a. Mostly education is up to middle standard. Economic condition is in general moderate. So, after this project the standard of education will be increase.

**f. Socio Economic Benefits Arising Out of Mining:**

- a. Generation of employment in the rural area.
- b. Improvement in the living standards of the rural people.
- c. Creating of infrastructural facilities like roads, electricity, shops, school etc.
- d. Helping to improve literacy in the area Exploiting natural mineral so generation of revenue.
- e. Helping to sustain construction activity.
- f. Improving the greenery of the area, this is otherwise poor.

**g. Liquid Effluent:**

Not applicable because small mine and impacts are negligible.

**h. Solid Waste:**

Not applicable because small mine and impacts are negligible.

**6. Biological Environment**

**Anticipated Impacts:**

- ❖ **Aquatic environment-** Proposed mining of the dry bed of the river, so no possibility of disturbance of aquatic life.
- ❖ **Flora and Fauna-** The mining activity will have insignificant effect on the existing flora and fauna. The project area is surrounded with agricultural land. It was found that the sand mining activity will not have any significant impact on the biological environment of the region.

**Mitigation Measures:**

- ❖ Improvement in riverbank stability.
- ❖ Large woody debris in the riparian zone will be left undisturbed or replaced when moved and not be burnt.
- ❖ Vegetative debris will not be stored within the mine lease area.
- ❖ Operation and storage of heavy vehicles within riparian habitat will be restricted.
- ❖ Covering of loaded vehicles to reduce dust emission, which may harm surrounding agricultural crops and other plant species conservation of biological diversity of plants, birds, and animals.
- ❖ Greenbelt Development and Bio-Diversity Preservation Plantation activities will be carried out at the bank of the river and along the haul roads. This activity will help for maintaining ecology and environment of the area.

**5 Project Benefits**

The proposed expansion project will lead to the following benefits:

- Sand is available for Building and Construction work and by regular removal of sand there is no possibility of flood.
- This project will contribute additional revenue to the state Exchequer in the form of revenue.

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- The project will result in the employment opportunities to the unskilled/skilled local people. Thereby, the quality of life of the employed people will increase.

**6 Sand Ghat Closure Plan**

S. No	Head	Area put on. use at start of plan [in Ha]	Additional Requirement during Plan period [in Ha]	Total [in Ha]	Area considered as	Net consider for calculation
1	Area under mining / pit	-	1.4418	1.4418	1.4418	1.4418
2	Area under dump	NIL	---	---	---	---
3	Infrastructure Workshop Administrative Building etc.	--	--	--	--	--
4	Roads	--	--	--	--	--
5	Mineral reject	--	--	--	--	--
6	Green Belt Plantation /Soil dump	--	--	--	--	--
7	Tailing Dam /pond	--	--	--	--	--
8	Effluent Treatment Plant	--	--	--	--	--
9	Mineral storage	--	--	--	--	--
10	Township area	--	--	--	--	--
11	Other to specify	--	--	--	--	--
<b>GRAND TOTAL</b>			1.4418	1.4418	1.4418	1.4418

- ❖ Mining will be avoided during monsoon and floods; this will allow the sand deposit to replenish.
- ❖ Gabion structure will be constructed for the sand to replenish during monsoon season.

**7 Planning brief:**

The proposed project is opencast manual sand mining activity.

Supply demand ratio:

Information required on demand and supply of district (2023-24)			
S.No.	Name of District	Total sand Demand of District in Brass	Total Sand Available in district in Brass

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1	Jalgaon	191380	104531
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**8 Compliance of earlier Environmental Clearance**

Pilkhede sand spot of Pilkhede village of Jalgaon tehsil has got environmental clearance in the year 2014-2015 but the sand ghat did not get a response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot.

**9 Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020.**

- ❖ District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- ❖ Appropriate feedback and its redressal mechanism shall also be made operational.
- ❖ Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- ❖ Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- ❖ The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- ❖ Printed on Indian Bank Association (IBA) Approved
- ❖ Magnetic Ink Character Recognition Code (MICR) paper
- ❖ Unique Barcode
- ❖ Unique Quick Response Code (QR)
- ❖ Fugitive Ink Background
- ❖ Invisible Ink Mark
- ❖ Void Pantograph
- ❖ Watermark
- ❖ GPS BASED VEHICLE TRACKING SYSTEM
- ❖ CCTV Camera

**Cluster certificate with reference to the EIA Notification 2006 amended from time to time with specific remarks on the cluster formation in the periphery of the proposed sand ghat along with area map showing distances between adjoining sand mine areas.**

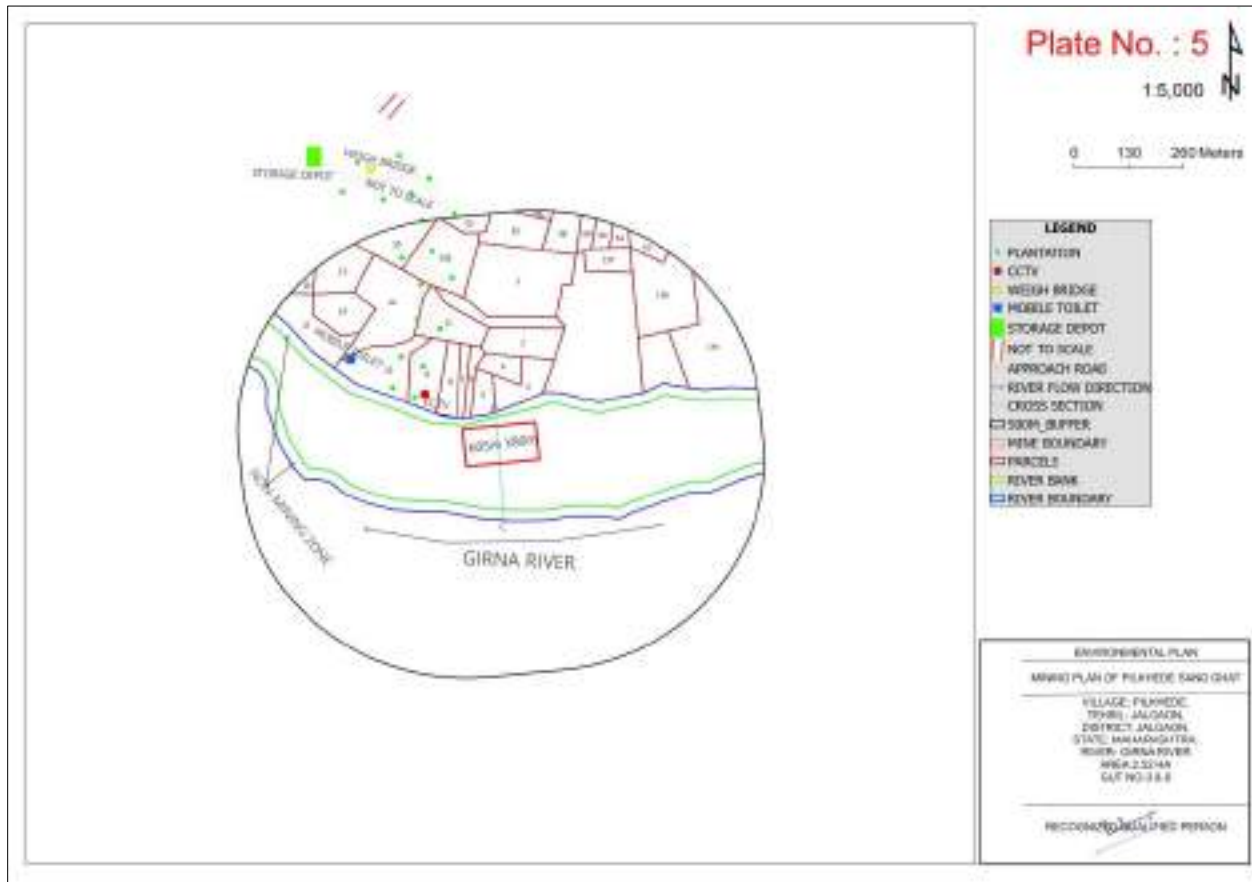
Pilkhede does not form a cluster.

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**10 Layout of proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc.**

Proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc. layout is given below:



**11. Proposed approach road for transport of mined sand from sand ghat to the storage area and consent of storage area from the concerned landowners is an after-auction activity to use their land as approach road.**

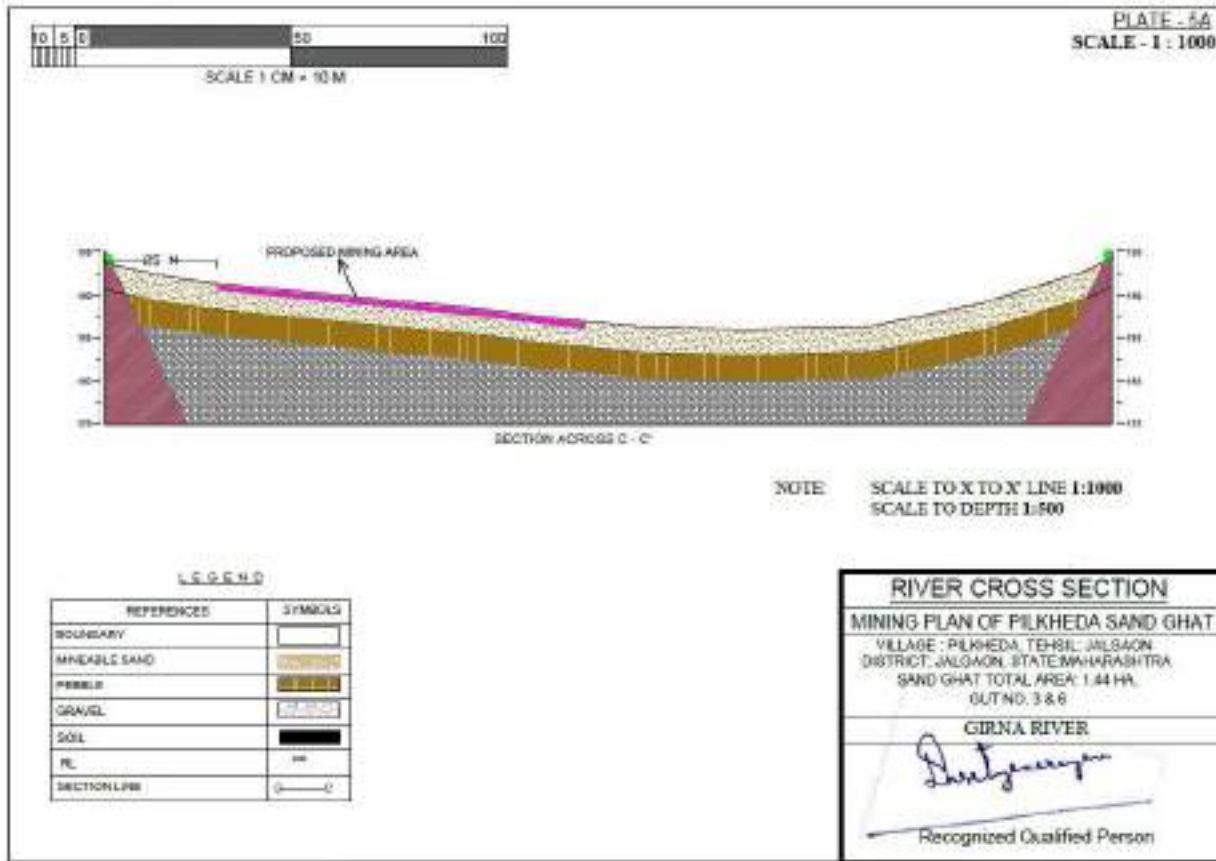
The proposed approach road length is at 555m and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the river bank. Consent of road submitted by Jalgaon Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from land owner.

**12. Cross -Section of riverbed showing distance of proposed sand mine area from the riverbank and other details as prescribed in the Enforcement & Monitoring Guidelines for sand mining published in January 2020 by MoEF&CC.**

Cross section of riverbed is shown below:

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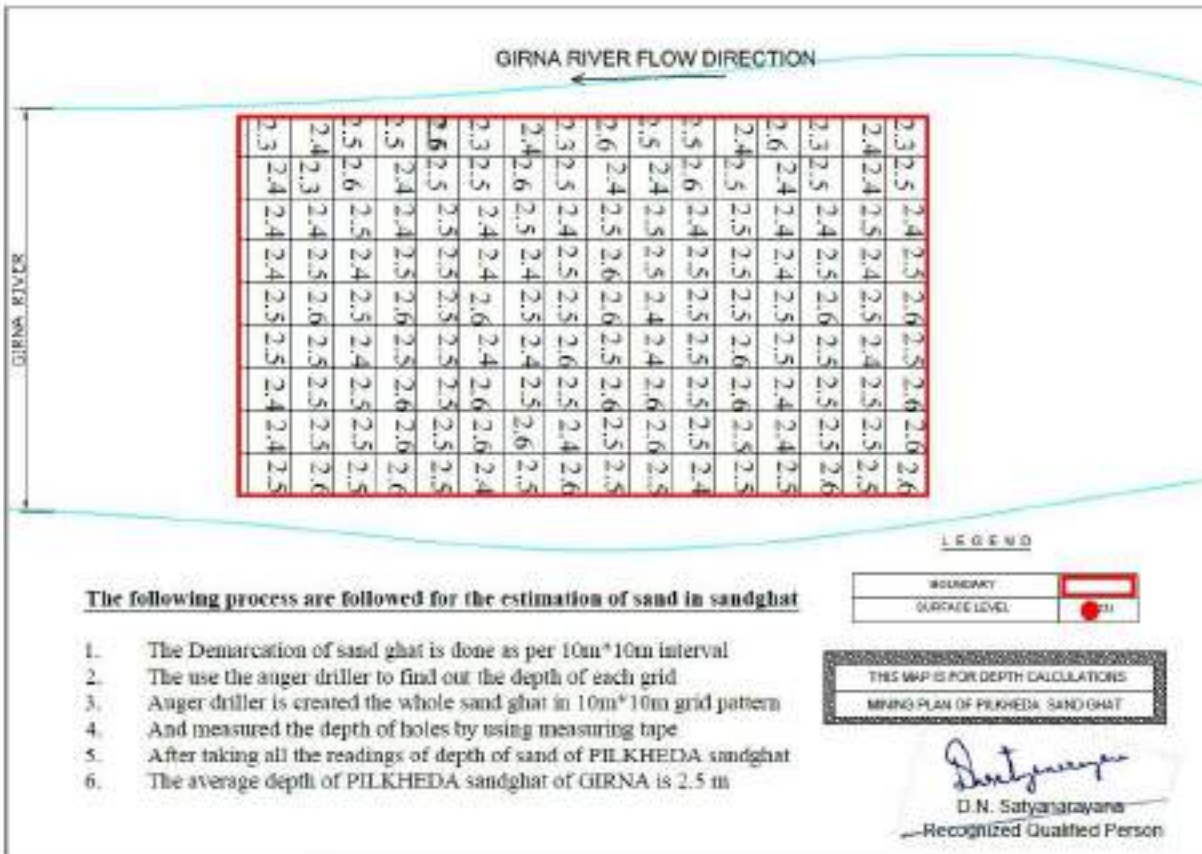
**13. Details of District Level Task Force committee meetings and status of compliance of its recommendations if any.**

District Level Task Force Committee Meeting details is enclosed.

**14. Methodology for Sand Mining:**

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15. Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.

**DANDY-BOLTON EQUATION**

1. **For Runoff Less Than 2 Inches**  

$$S = 1280 * (Q) * 0.46 * (16 - 0.26 \log(A)) * F$$
2. **For Runoff More Than 2 Inches**  

$$S = 1958 * (Q) * (e^{-0.055 * Q}) * (13 - 0.26 \log(A))$$

Where

- S= sediment yield of stream (t/yr./km<sup>2</sup>),
- Q= average annual runoff (m<sup>3</sup>),
- A= net drainage area in sq. Mile

The sediment yield of Girna river at Girana dam station is 4.612\*10<sup>20</sup> tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation.

(Source: State Irrigation Department)

**Pilkhede sand spot over an extent of 1.4418Ha At Girna River Bed Gut No.3 & 6, Pilkhede Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

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**Conclusion:**

As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**16 PP to submit details of proposed plantation plan along with its location and requisite permission to be obtained from the Competent Authority.**

Plantation details are presented below:

<b>Location of greenbelt</b>	Both sides of approach road, On the riverbanks of both sides of the sand spot & nearby open areas. Haul Road outside riverbed.
<b>No. of plants to be planted</b>	638
<b>Spacing of plants</b>	4 m grid interval
<b>Species selected</b>	Native species

Tree species recommended for Plantation:

<b>Botanical name</b>	<b>Local name</b>	<b>Importance</b>
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

**17 BUDGET FOR CORPORATE ENVIRONMENT RESPONSIBILITY (CER)**

About 2% fund of the project cost is allocated for Corporate Environment Responsibility (CER) activities as presented in below Table:



**Pilkhede sand spot over an extent of 1.4418Ha At Girna River Bed Gut No.3 & 6, Pilkhede Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

SNo.	Budget Allocated	Budget (In INR)
1	Installation of one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	25000
3	Needed Repairing work with consultation of Grampanchayat	25000
4	Community Infrastructure Development(Steel fencing to ZP school with consultation of Grampanchayat)	70000
Total		2,00,000

**18 Environmental Management Plan (EMP)**

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR **184250** and recurring cost provision of about INR **253950** has been kept in the project cost towards the environmental protection, control and mitigation measures and implementation of the EMP, this cost is born by bidder / lease holder. The budgetary cost estimate for the EMP is given in Table.

**Table 6: Environmental Budget**

			Pilkhede		
			EMP Budget		
SNo.	Component	Description	Capital cost Rs.	Recurring Cost Rs.	Total Cost in Rs
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	27750	27750
3	Approach Road Maintenance		-	22200	22200
4	Green Belt Plantation	Along the River Bank	20250	-	20250
		Along the Approach Road	139000	-	139000
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	5000	-	5000
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	30000	30000
7	Security	Display Boards and other security measures	10000	-	10000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health	-	24000	24000

**Pilkhede sand spot over an extent of 1.4418Ha At Girna River Bed Gut No.3 & 6, Pilkhede Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

		check-up (1000Rs./ Employee)			
9	Tarpaulin Cover (5000 INR per one Cover)		10000	-	10000
<b>Total</b>			<b>184250</b>	<b>253950</b>	<b>438200</b>

**19 Public Consultation Report**

Jalgaon					
S.No	Villager Name/Village,Taluka	Type of Person (Villager/Government Official)	Query raised by the Villager/Official	Response from the Proponent	Action Plan

**20 Summary and Conclusion**

The environmental status of the project site and study area of 10 km radius is delineated with respect to air, noise, water, land, biological and socio-economic environment the different project activities in the construction and operation phases are identified. To identify the impacts, the interaction between the project activities and different components of the environment are classified phase wise. A summary of the identified impacts is given in the following paragraphs.

During the operational phase, transportation of sand could cause a temporary disturbance to local environment which will be prevented with the proposed mitigation measures proposed in Point no. 4.

Proposed project will not have any major significant negative impacts. The minor impacts arising out during Excavation and Transportation phases can be mitigated with the help of the proposed Environmental Management Plan.

In general, Sand excavation from Pilkhede Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

### **PRE-FEASIBILITY REPORT**

The Pilkhede Sand Spot is situated at Village Pilkhede , Taluka Jalgaon, District- Jalgaon. Sand Spot is 1.4418Ha of area in Gut No 3& 6 of Pilkhede village of Jalgaon Tehsil, Jalgaon district. Detail of the project is summarised below

- District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- District Collector Jalgaon appointed M/s Integrated Precision Systems & Services Pvt. Ltd., for preparation of Mining Plan and grant of environmental clearance.
- Applicant proposed to auction the said Sand Spot over an area of 1.4418Ha area and identified for preparation of mining plan and for grant of Environmental Clearance.
- Mining Plans are prepared by Recognized Qualified Person and approved by Directorate of Geology & Mining Govt. of Maharashtra.
- About 2547 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Girna river bank.

#### **1. Physiography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 180 to 184 from MSL i.e 4m. The Highest contour value is 184 and lower is 180. The flow direction of GIRNA river is towards SW

#### **2. Local Geology**

The local geology is Sand of various size up to depth of 2.5- 3meter.

#### **3. Details of Exploration**

**Pilkhede sand spot over an extent of 1.4418Ha At Girna River Bed Gut No.3 & 6, Pilkhede Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the river bed.

Mining - The mining will be continued with present method of open cast mining by cutting slice of 0.5m of Sand along topo-relief, by advancing from SW to NE direction as per allotted area by auction. The production can be at the rate of 7209 Cu.m or 2547 brass i.e. 1 year from the date of mining plan approval, the size of pit at the end will be 1.4418Ha.

**Introduction of the project/ background information**

The Pilkhede Sand Spot has been kept for Auction which is situated at Village Pilkhede , Taluka Jalgaon , and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

**i) Brief description of project**

The Sand Spot has sufficient Reserve of Sand to work at 7209 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m area of Sand by advancing from North to South direction as per allotted Sand Spot area and handling of material with the help of labourer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**ii) Need for the project**

The Sand or Sand Spot under reference is aimed at exploring Sand as ROM in various sizes i.e. fine to Coarse grain which is Transported to consumer site in outside Sand Spot area, for the infrastructure development i.e. Construction activity to produce Concrete for putting in the floor, roof- slabs, Column, Pillars, Bridges & Dam construction.

**3. Project Description**

This mining project is an independent project and not an interlinked project.

**i) Location**

Pilkhede is a small Village in Jalgaon Taluka in Jalgaon District of Maharashtra State, India. It comes under Pilkhede Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 16KM towards N from District headquarters Jalgaon. The Sand Ghat is 341KM from State capital Mumbai.

Area covered in SOI Toposheet No- 46P/8

The boundary pillars of Sand Spot area are given below with GPS values.

<b>Boundary Points Pilkhede</b>	<b>Latitude</b>	<b>Longitude</b>
BP1	21° 7'28.69"N	75°27'25.44"E

**Pilkhede sand spot over an extent of 1.4418Ha At Girna River Bed Gut No.3 & 6, Pilkhede Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

BP2	21° 7'28.15"N	75°27'19.85"E
BP3	21° 7'31.03"N	75°27'19.54"E
BP4	21° 7'31.57"N	75°27'25.13"E

**ii) Alternate Sites**

No alternate site is proposed.

**iii) Magnitude of Operation**

Proposed period for mining of sand will be decided by the office of district collectorate 7209 cu.m. will be excavated during the period.

**iv) Project description-mining details**

The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 162m L X 89m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable. The Sand Spot has sufficient Reserve of Sand to work at 7209 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m slice of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**v) Raw material, marketing & transport of ore**

The proposed sand spot will be auctioned, and successful bidder will be responsible for carrying out mining operations as per environmental terms and conditions, approved mining method as per approved mining plan and other terms and conditions. The loading of Sand generated to the tractor/tipper/dumpers will be done by loaders & material transported to the Dealer site.

**vi) Resource optimization, recycle, reuse**

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

**vii) Water & energy requirement**

The major water requirement in the lease area is for dust suppression and for drinking use. The total water requirement is estimated as 6.2 KLD the required water for dust suppression can be arranged through tankers from nearby village and drinking water will be provided in earthen pots for labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

**viii) Quantity of waste & scheme for management**

There will not be any waste generation within the lease area.

**ix) Schematic Representations**

It is a proposal of opencast manual sand mining from river bed. Mining plan is approved by the competent authority.

**4. Site Analysis**

**i) Connectivity**

Pilkhede is a small Village in Jalgaon Taluka in Jalgaon District of Maharashtra State, India.

The sand spot area is connected to approach road at a distance of 555 m in South direction. Jalgaon Railway Station is present at a distance of 10km.

**ii) Land Use, form & Ownership**

The ultimate land use pattern for the lease area of 1.4418Ha. will be consisting of

- |                                    |   |           |
|------------------------------------|---|-----------|
| 1. Mining Area                     | : | 1.4418Ha. |
| 2. Construction of Temporary Roads | : | 0.00 ha.  |
| 3. Total                           | : | 1.4418Ha. |

At present ownership of this sand spot area is in the hand of Govt. of Maharashtra, after approval of mining plan and EC quarry area will be transfer to bidder after auction.

**iii) Geology**

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

**Existing land use pattern**

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

**Social-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- A. The mining operations will provide direct & indirect employment village people.
- B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- C. Local work force will be given first preference for employment.
- D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area).

**Planning brief:**

The proposed project is opencast manual sand mining activity.

**Supply demand ratio:**

Information required on demand and supply of district (2023-24)			
S.No.	Name of District	Total sand Demand of District in Brass	Total Sand Available of district in Brass
1	Jalgaon	191380	104531

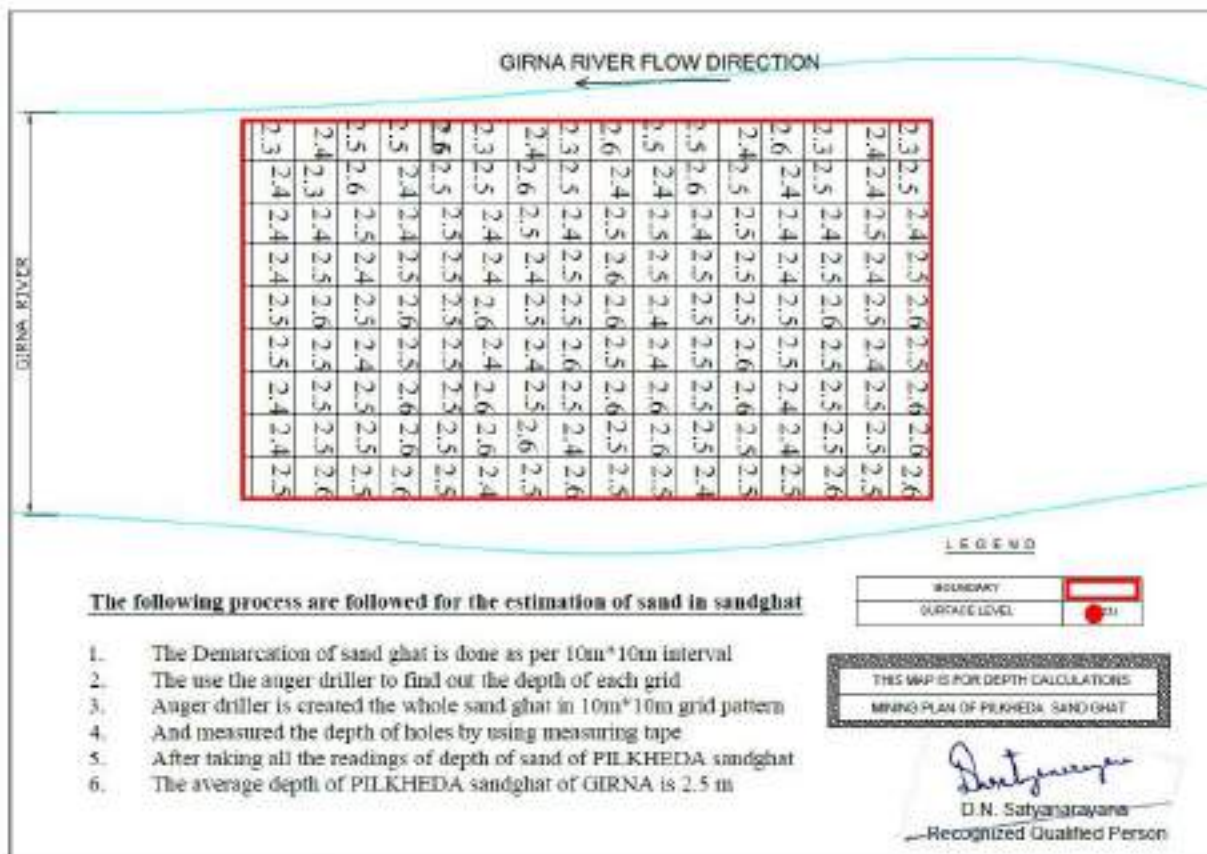
**Replenishment:**

- Area of deposition and erosion was calculated for each cross-section after giving due regard to stability & safety of active channel banks & other features of importance.
- DGPS and other survey tools have been used to define topography, contours and offsets of lease area.
- Contour & elevation benchmarks are provided with the baseline data for assessing pre and post-study period scenario.
- Physical benchmarks are fixed at intervals (1 in 30 m) & Reduced Levels (RL) are validated from a nearby standard RL.
- These RL are engraved on a steel plate (Bench Plate) & are fixed & placed at locations which are free from any damages & are available in pre and post-study period.
- Bench plates are available for use during the mining period as reference for all mining activity.
- Baseline data on elevation status for a grid of 10 m x 10 m is taken to ensure the accuracy in the assessment.
- It was made sure that two consecutive cross-sections in longitudinal and lateral direction is not be more than 10-meter distance apart.
- Changes have been observed in the elevation in pre and post scenario at each node and were depicted in graphical forms with an appropriate scale for estimating the area of deposition & erosion.
- Elevation level was placed in reference to the nearest bench-plates established for the purpose.
- The levels (MSL & RL) of corner point of each grid were identified and safety barriers (Non-Mining) are demarcated as restricted in consensus with Mineral Concession Rules of respective State, and the provision mentioned in this Sustainable Sand Mining Management Guidelines.
- A clear identification was highlighted between grids under mineable and grids under the non-mineable area. These baseline data (pre and post) was subjected to stimulation with the help of data mine software to derive at the replenishment area and corresponding volume and estimated weight.

**Pilkhede sand spot over an extent of 1.4418Ha At Girna River Bed Gut No.3 & 6, Pilkhede Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.**

- The database was structured in a tabulated form clearly depicting the nomenclature of the section lines, latitude and longitude of the starting point, chain-age and respective levels of all the points taken on that section line.
- Net area was derived after summation of area of deposition minus area of erosion for each cross-section.
- Volume was estimated by multiplying distance between two cross-sections with average of net area of these two consecutive cross-sections.
- One sample per 900 square meters (30 m x 30 m) was preferred for sample density for assessment of bulk density for estimation of deposition rate.
- Care was taken that the sample for assessment of bulk density is taken from the deposition zone & not from erosion.

**Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.**



**DANDY-BOLTON EQUATION**

1. For Runoff Less Than 2 Inches

$$S = *1280*(Q)*0.46*(1.46-0.26\log(A)) *F$$

2. For Runoff More Than 2 Inches



$$S = 1958(Q)^{0.055} (1.43 - 0.26 \log(A))$$

Where

S= sediment yield of stream (t/yr./km<sup>2</sup>),

Q= average annual runoff (m<sup>3</sup>),

A= net drainage area in sq. mile

- The sediment yield of Girna river at Girana dam station is 4.612\*10<sup>20</sup> tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation..

**(Source: State Irrigation Department)**

**Conclusion:**

As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020**

- District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- Appropriate feedback and its redressal mechanism shall also be made operational.
- Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- Printed on Indian Bank Association (IBA) Approved
- Magnetic Ink Character Recognition Code (MICR) paper
- Unique Barcode
- Unique Quick Response Code (QR)
- Fugitive Ink Background
- Invisible Ink Mark
- Void Pantograph

***Pilkhede sand spot over an extent of 1.4418Ha At Girna River Bed Gut No.3 & 6, Pilkhede Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.***

- Watermark
- CCTV at mine lease site
- GPS Based Vehicle Tracking System

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided outside Sand Spot area.

**Compliance of earlier Environmental Clearance**

Pilkhede sand spot of Pilkhede village of Jalgaon tehsil has got environmental clearance in the year 2014-2015 but the sand ghat didn't get a response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot.

**7. Proposed Infrastructure**

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided in outside Sand Spot area.

**8. R&R Plan**

R&R is not involved.

**9. Project schedule**

Period of mining for the proposed sand spot will be decided by the Office of District Collectorate.

**10. Analysis of Proposal**

Description of the project included in items 1-10 above indicates the following:

1. It is proposed for opencast manual river sand mining.
2. Opencast mining without hampering the present environmental quality of the area.
3. Income to local people is uncertain & initiation of mining will ensure regular income to local people.

**11. Costing**

Costing parameters will be decided by the District Authorities.

**12. Compliance to Environment Clearance**

Whether there are any serious violation of safety rules and regulation which may jeopardize human health and safety. If so, give details of violations and state the steps proposed to be taken with the time scheduled to rectify the violations:

No, there are not any serious violation of safety rules and regulation, which may jeopardize human health and safety. The applicant has given a commitment in this effect and undertaking also given to follow and implement, as specified in the mining plan. The applicant is undertake to abide and implement any special conditions imposed by various authorities and also to complete formalities under provision of the Mines & Mineral (Development & Regulation) Act, 1957 and the Bombay Minor Mineral rules, the Mineral Conservation and Development Rules, 1988 as amended, the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule 2013, MoEF&CC Notification S.O. 141 (E) dated 15th January 2016,

***Pilkhede sand spot over an extent of 1.4418Ha At Girna River Bed Gut No.3 & 6, Pilkhede Village, Tehsil- Jalgaon, Jalgaon District, Maharashtra.***

and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, Sustainable Sand Mining Management Guidelines 2019, Sand Mining Policy 2020

**13. Any Other Information:**

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road -- 11) Railway -- 12) Tailing Pond -- 13) Effluent Treatment Plant - - 14) Mineral separation plant -- 15) Township Area -- 16) Others to specify -- 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule-2013, MoEF&CC Notification S.O. 141 (E) dated 15<sup>th</sup> January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.05.1994 and 04.09.2006.

**Risk Assessment for Pilkhede Sand Spot**

**1. Introduction**

A main principle of risk assessment is that it should take place before any changes are made. Risks should be assessed and control measures are put into action before new work is introduced or systems are changed. The process should influence budgets and allocation of resources, rather than being an afterthought when the decisions have already been made.

The risk management process is continuous, with well-defined steps that support better decision making by contributing greater insight into risks and their impacts. Risks from all sources are identified and once they pass the materiality threshold, a formal process begins in which causal factors and consequences are identified and the correlation with other risks and the current risk mitigating strategy is reviewed. One of the challenges is to ensure that mitigating strategies are geared to deliver reliable and timely risk information to support better decision-making.



The mining operations at PILKHEDE SAND SPOT are subjected to the risks and hazards normally encountered in open-cast mining operations. These risks include operational risks relating to

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materials handling, accidents, removing material from quarry area. Mining processes also rely on key inputs, for example fuel. Appropriate insurance can provide protection from some, but not all, the costs that may arise from unforeseen events. If any of these risks should materialize, such an event could result in serious harm to employees and contractors, delays in production, increased production costs and possible increase in liabilities.

Disruption to the supply of key inputs, or changes in their pricing, may have a material and adverse impact on PILKHEDE SAND SPOT asset values, costs, earnings and cash flows. Failure to meet production target results in increased unit costs. The impact is more pronounced at operations with a high level of fixed costs. Mitigation strategies include efforts to secure strategic supplies at competitive prices, energy reduction, and application of group water management guidelines, adoption of lean production principles and practices and business improvement initiatives to reduce unit costs.

There are certain aspects which should be taken care of, in a quarrying plan with accordance of risk management.

<b>Components</b>	<b>Risk Involved</b>
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
Fire	Only trucks and tractors will make use of diesel for transportation. Diesel is not so highly inflammable but accidental fires can take place.
Road Accidents	Vehicles are used for transporting the material from quarry area to the buyer's location. Due to some improper maintenance of the vehicle a road accident can occur leading to fatal results.

To minimize the risk, certain measures can be taken like implying safety rules, facilities of basic first aid near the site and having training for the workers about personal safety.

Disaster Management Plan is envisaged with a goal to prevent hazards and accidents at work places by careful design, operation, and maintenance of equipment's. All safety precautions and provisions of Metalliferous Mines Regulation-1961 will be strictly followed. Suitable control measures will be adopted to take care of hazards/disasters that may occur during mining operation.

- No mining activities during rainy days or just after heavy rain.
- Fire fighting, first aid provisions & safety appliances will be made available to the staff and their use regularly checked
- Regular maintenance of all haulage roads & mining machinery as per manufacturer's guidelines will be done

**APPENDIX VIII  
(See paragraph 6)**

**FORM 1 M**

**APPLICATION FOR MINING OF MINOR MINERALS UNDER CATEGORY 'B2' FOR LESS THAN AND EQUAL TO FIVE HECTARE**

**(I) Basic Information**

(i) Name of the Mining Lease site: Hingone Sim Pra Jalod Sand Spot

(ii) Location / site (GPS Co-ordinates):

Boundary Points Savkheda	Latitude	Longitude
BP1	21° 8'51.15"N	75°14'35.20"E
BP2	21° 8'50.18"N	75°14'34.28"E
BP3	21° 8'51.44"N	75°14'32.75"E
BP4	21° 8'51.88"N	75°14'29.19"E
BP5	21° 8'51.28"N	75°14'26.95"E
BP6	21° 8'52.53"N	75°14'26.57"E
BP7	21° 8'53.19"N	75°14'29.14"E
BP8	21° 8'52.72"N	75°14'33.34"E

(iii) Size of the Mining Lease (Hectare): 1HA

(vi) Capacity of Mining Lease (TPA): 3533Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 21.20Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, Maharashtra

**(II) Environmental Sensitivity**

S. No.	Areas	Distance in Kilometer/Details
1	Distance of project site from nearest rail or road bridge over the concerned River, Rivulet, Nallah etc.	Bridge on SH-14, 1.03Km, SE
2	Distance from infrastructural facilities Railway line National Highway State Highway	Dharangaon Railway Station, 16Km, S NH-53, 15.3Km, S SH-14, 1.5Km, SW

**Savkheda sand spot over an extent of 1Ha At Tapi River Bed Gut No.8, 9 & Out of 10, Savkheda Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

**Form 1M**

**Page: 2 of 2**

	Major District Road Any Other Road Electric transmission line pole or tower Canal or check dam or reservoirs or lake or ponds In-take for drinking water pump house Intake for Irrigation canal pumps	SH14, 1.03Km, SE 1.4Km SW ET, 0.50Km, S Padalsare Dam, 26Km, W Nil Nil
3	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil
4	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Water bodies: this is the case of river sand mining in Tapi River bed; RF, 10.3Km, SE
5	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil
6	Inland, coastal, marine or underground waters	Tapi River bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	NH-53, 15.3Km, S SH-14, 1.5Km, SW
9	Defense installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Ssavkheda 860m, SW
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	NES School, 1.80Km, SE Civil Hospital, 2K.3Km, SE
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Tapi River Bed ( this is the case of river sand mining) RF, 17.2Km, S
13	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil

14	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	The mine lease area falls in Seismic Zone III (Moderate), according to the Indian Standard Seismic Zoning Map.
15	Is proposed mining site located over or near fissure / fracture for ground water recharge	No
16	Whether the proposal involves approval or clearance under the following Regulations or Acts, namely:- (a) The Forest (Conservation) Act, 1980; (b) The Wildlife (Protection) Act, 1972; (c) The Coastal Regulation Zone Notification, 2011. If yes, details of the same and their status to be given.	No
17	Forest land involved (hectares)	Nil
18	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Orders or directions of the Court, if any, and its relevance with the proposed project.	Nil



***Savkheda sand spot over an extent of 1Ha At Tapi River Bed Gut No.8, 9 & Out of 10, Savkheda Village, Tehsil- Amalner, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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## **ENVIRONMENTAL MANAGEMENT PLAN**

### **1 Introduction**

Ministry of Environment, Forest & Climate Change (MoEF&CC) Notification 2006 and Sustainable Sand Mining Management Guidelines 2016 and as per provision in Mines and Minerals (Development and Regulation) Act 1957 Schedule 60 section 15, Govt Of Maharashtra makes a Minor Mineral Extraction Rules 2013 to extract all the minor mineral in scientific way so that there is no adverse impact on Environment and Climate. To extract every minor mineral from any land (either Government or Private) there is provision of mining plan which is approved by competent authority; For long term leased minor mineral (5 – 10 years period) and Sand excavation from river bed, Senior Deputy Director of Directorate of Geology and Mining is a Competent authority, for short term Temporary permits which is valid for one year, Committee headed by Hon. Collector is Final authority to Approved the District Mining Plan.

As per Minor Mineral Extraction Rules 2013 Rules 70, Disposal of sand from River bed, Nallah and creeks by way of public auction, in this regards Govt resolution Gaukhni -10/0615/case No. 289/kha dated 3rd January 2018 is applicable in entire state. As per Enforcement & Monitoring Guidelines for Sand Mining 2020 Sustainable sand mining management guidelines 2016, Standard Environment condition for sand mining and sustainable mining practices, district level survey report should be prepared and area suitable for mining and area prohibited for mining be identified.

### **2 Project Description**

Savkheda is a small Village in Amalner Taluka in Jalgaon District of Maharashtra State, India. It comes under Savkheda Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 36KM towards SE from District headquarters Jalgaon. The Sand Ghat is 3400KM from State capital Mumbai.

The sand spot area is connected to approach road at a distance of 555m in South direction. Jalgaon Railway Station is present at a distance of 10km.

Area covered in SOI Toposheet No 46P/4.

The GPS reading of boundary point are given below:

**Savkheda sand spot over an extent of 1Ha At Tapi River Bed Gut No.8, 9 & Out of 10, Savkheda Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

**Table 1: Salient Features of the Project**

Items	Details		
Location	Village- Savkheda , Tehsil- Amalner District-Jalgaon, Maharashtra.		
Latitude and Longitude	<b>Boundary Points Savkheda</b>	<b>Latitude</b>	<b>Longitude</b>
	BP1	21° 8'51.15"N	75°14'35.20"E
	BP2	21° 8'50.18"N	75°14'34.28"E
	BP3	21° 8'51.44"N	75°14'32.75"E
	BP4	21° 8'51.88"N	75°14'29.19"E
	BP5	21° 8'51.28"N	75°14'26.95"E
	BP6	21° 8'52.53"N	75°14'26.57"E
	BP7	21° 8'53.19"N	75°14'29.14"E
	BP8	21° 8'52.72"N	75°14'33.34"E
Sand spot area (In Ha)	1		
Proposed production capacity (In Brass)	3533		
Manpower Requirement (considering 3-month period)	30 labours +1 mate + 1Supervisor=32manpower		
Infrastructure Requirement (As per Govt Resolution 3rd January 2018)	1. Room / Hut for Official records 2. Electricity / Battery for Running CCTV on 24X 7 daily. 3. One Computer / Android base Mobile for the online generation of Invoice number.		
Water requirement & source	8.4 KLD – Tankers from nearby village.		
Project cost INR (Lakh)	21.20 Lakhs		

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**3 Baseline Environmental Status**

**i. Topography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Amalner, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Amalner, Jalgaon, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Amalner, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 163 to 165 from MSL i.e 2m. The Highest contour value is 165 and lower is 163. The flow direction of TAPI river is towards SW

**ii. Hydrology**

The will be no change in water table during mining operation, as the depth of mining shall be restricted to 0.5m water level, which is less likely to affect surface level or ground water table. There is no

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proposal of any stream modification/diversion due to this mining activity hence there will be no impact on flow of water.

**iii. Soil Environment**

The area is not having any top soil or fertile soil. The depth of mining shall be restricted to 0.5m. There is no major impact on soil of the study area due to mining activities

**iv. Land Use Land Cover**

The project area does not consist of any forest land. It does not consist of any human habitations. Any change in scope of mining as per approved mining plan can lead to bank erosion /cutting and thereby river channel shifting degradation of land, causing loss of properties and degradation of surrounding landscape.

**v. Water Environment**

There will not be any waste water discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 0.5m only so there will not be any intersection with ground water table. It is observed from the dug well in the adjacent plain area and in the nearby villages that the ground water table varies depending upon seasonal variations. The depth to water levels in the district ranges from 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 0.5m that too within the river course and the total mining operation will be achieved through manual means, there will be no effect on ground water table. All the stipulations of MoEF for sand mining and guidelines as per the Maharashtra Minor Mineral Extraction [Development and Regulation] Rules, 2013 of Section 15 of MMDR Act 1957 [67 of 1957] will be followed. Hence, impact on water regime due to the proposed sand mining is not anticipated.

1. Precautionary measures will be initiated for closing the operation and shifting the men and transport vehicles prior to onset of monsoon.
2. No oils or lubricants will be discharged in the sand to avoid water pollution.

**vi. Climate**

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

**vii. Biological Environment**

The project is only of extraction of minor minerals viz. sand from the river quarry.

Flora: The area is completely barren and devoid of any vegetation in the river. Only few thorny bushes are seen on the banks of the River.

Fauna: As there is no forest cover, no wild life can be seen in this area.

1. There will be no significant impact of the river quarry mining project on the biological diversity found in the 5km. radius of the site.

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2. The mining lease area is in non-forest land i.e. sandy river quarry where presence of fauna is not at all seen. As such, there will be no adverse impact of the manual mining activity on fauna around the mining lease area.

3. No adverse impacts will be envisaged on the existing aquatic fauna, on downstream side (away from site) as the mining confined to above water level only and at all touching/disturbing water table.

**viii. Socio-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

A. The mining operations will provide direct & indirect employment village people.

B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.

C. Local work force will be given first preference for employment.

D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area)

**4 Impact assessment report along with proposed mitigation measures.**

Preparation of Environmental Management Plan is required for formulation, implementation, and monitoring of environmental protection measures during and after commissioning of projects. The plan should indicate the details as to how various measures have been proposed to be taken including cost components as may be required.

**1. Land Environment**

The type of mining and the characteristics of the mineral deposit both affect the degree to which mining disturbs the landscape. Sand Mining and allied activities will be done in the fluvial plain formed by river meandering. Mining of sand may cause a few environmental degradations.

**a. Anticipated Impacts:**

- ❖ Damage of riverbank due to access ramps to riverbed, may cause soil erosion.
- ❖ Destruction of river bank hinterland and ecological due to extraction of sand by probability of damage to the flood control bunds (built along the river side) due to heavy movements of vehicles over the bund to approach the mine area and further during transportation for sand from the mine area.
- ❖ Improper disposal of packing material, carried by the workers like used sachet/ gutka /pan masala pouches.
- ❖ Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations, borehole users due to dust, noise and it also causes traffic hazards.
- ❖ Surface degradation due to road network.

**b. Mitigation Measures:**

**Savkheda sand spot over an extent of 1Ha At Tapi River Bed Gut No.8, 9 & Out of 10, Savkheda Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

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- ❖ Safety distance of 3 meter or 1/10th of the width of the river whichever is more will be left from both the banks of the river (as per “Sustainable sand mining guidelines”).
- ❖ No foreign material like polythene bag, jute bag and useless articles should be allowed to remain/spill in river bed and catchment area, or no pits/pockets will be allowed to be filled with such material.
- ❖ Minimum number of access roads to river bed for which cutting of river banks will be avoided and ramps are to be maintained.
- ❖ Care will be taken to ensure that ponding is not formed in the river bed.
- ❖ Mining will not exceed beyond the allowed extraction capacity.
- ❖ Green belt will be developed along the haul road and the bank of rivers of mine premises and near the sand mining site. While selecting the plant species, preference will be given for planting native species of the area.

**3. Water Environment**

**a. Anticipated Impacts:**

- ❖ As the project activity is carried out in the dry part of river bed, none of the project activities will affect the water environment or riverbank habitats. Project activities will not have any adverse effect on the physical components of the environment and therefore may not have any effect on the recharge of ground waters or affect the water quality. Monitoring of water quality will be checked yearly.

**b. Mitigation Measures:**

- ❖ Mining is avoided during the monsoon season and at the time of floods. This will help in replenishment of sand in the riverbed.
- ❖ Mining below subterranean water level will be avoided as safeguard against environmental contamination and over exploitation of resources.
- ❖ River stream will not be diverted to form in active channels.
- ❖ Utmost care will be taken to minimize or control leakage vehicles to be used for sand transportation.
- ❖ The washing of tractor trolleys in the river will be avoided.
- ❖ The contractor will follow all guidelines and rules for proper and scientific method of mining during the period of extracting the sand.

**4. Air Environment:**

**a. Anticipated Impacts:**

**Due to Haul Road/ Access Road:**

- ❖ Plying of tractor trolleys from public road to river sand collection points needs access roads.
- ❖ Majority of such access roads are the same existing roads/tracks being used by pedestrians/cart owners. Movement of heavy vehicles sometimes causes problems to cattle, agriculture land, and human habitations due to dust, noise and movement of public.
- ❖ These environmental problems are felt more as the area is rural in nature.

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**Due to Mining process:**

- ❖ Air pollution is likely to be caused at various stages of sand mining operations such as excavation, loading & transportation of material.
- ❖ Most of the dust will be generated from loading & transportation. This dust becomes air borne and gets carried away to surrounding areas.
- ❖ The impact on air is mainly localized in nature as the dust particles are not carried to longer distances and the effect is felt within the core zone of the project involving active Sand mining operations.

**b. Mitigation Measures:**

**Mitigation of Impacts on Access Roads:**

- ❖ Movement of the vehicles on the road will be increased; however, unmetalled road in the mining area will be sprinkled with water at regular intervals.
- ❖ In addition to prevent spillage by tractor trolleys over loading should be controlled along with speed limit (1Brass /tractor trolley).
- ❖ Maintenance of haul road will be done on regular basis.

**c. For Fugitive Dust Emission:**

- ❖ To avoid fugitive dust emissions at the time of excavation, regular sprinkling of water will be done on regular basis.
- ❖ Sand is transported to the sites by road through tractor trolleys. The sand carrying vehicles shall be covered by tarpaulin sheets.
- ❖ The Green Belt development will be prepared along the haul roads, which will act as a pollution sink.
- ❖ To minimize the vehicular pollution from the sand transporting vehicles, the following conditions will insist to permit the vehicles of the transporters.
- ❖ The vehicles should be (Bharat-IV stage) compliant and should have pollution control certificate (PUC) issued by appropriate authorities.
- ❖ Regular maintenance of transport vehicles and monitoring of vehicular emission levels at periodical intervals.

**5. Noise:**

**a. Anticipated Impacts:**

Noise environment in this project will be affected only by the equipment at the site and vehicular transportation. Since slight increase in noise levels can be expected.

**b. Mitigation Measures:**

- ❖ Minimum use of Horns at the village area.
- ❖ Timely maintenance of vehicles and their silencers to minimize vibration and Sound.
- ❖ Phasing out of old and worn-out tractor trolleys.
- ❖ Provision of green belts along the road networks.
- ❖ Care will be taken to produce minimum sound during sand loading.
- ❖ Use of Backhoe and ear plugs may be provided to protect the labors working at the site.

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**6. Socio-Economic Environment**

This project operation will provide livelihood to the poorest section of the society.

**Anticipated Impacts and Evaluation:**

- ❖ The project activities shall not have any adverse impacts on any of the common property resources of the village communities, as the sand mine lease area is not being used for any purpose by any section of the society in this region.
- ❖ There is no R & R involvement in this project.
- ❖ There is no land acquisition in this project.
- ❖ The results of the field survey conducted to understand the knowledge and perception of the people living around the project area gives a clear idea about the need for the project.
- ❖ A major portion of the houses in the study area are semi- pucca type structures.
- ❖ The water source to these areas is from the municipal connection and private bore wells and wells. The awareness level regarding the proposed mining activity is very high. The proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes.

**a. Social and Demographic Profile:**

The workers are from local villages. These people have been provided all welfare from a lessee like medical benefits, insurance, fees for children's education etc. They have some land and cattle for their daily earnings. Additional income earned from the Sand Mining work will improve their living standard. The group of quarries in and around will help to have infrastructure facilities like roads, schools, shops etc. This will improve their social life.

**b. Occupational Health and Safety:**

This is Riverbed Sand Mine. So, the mining activities are comparatively less because the production is not on large scale. Workers do not come across any extreme condition like excessive heat, moisture etc. Workers working around it may come across this dusty environment, which can be managed by providing face mask.

**c. Human Settlement:**

There are no houses in and around lease area. All the due precautions will be taken during mining. Transport of finished products is through the villages. There will be psychological impact of the traffic on the local people. However, the intensity of traffic is less.

**d. Health and Hygiene:**

In general, the health of villagers is moderately good. In the rainy season, the atmospheric condition is unhygienic due to lack of proper drainage and sanitation in the village habitation. Villagers are working in agricultural fields and work as laborers.

**e. Education:**



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- a. Mostly education is up to middle standard. Economic condition is in general moderate. So, after this project the standard of education will be increase.

**f. Socio Economic Benefits Arising Out of Mining:**

- a. Generation of employment in the rural area.
- b. Improvement in the living standards of the rural people.
- c. Creating of infrastructural facilities like roads, electricity, shops, school etc.
- d. Helping to improve literacy in the area Exploiting natural mineral so generation of revenue.
- e. Helping to sustain construction activity.
- f. Improving the greenery of the area, this is otherwise poor.

**g. Liquid Effluent:**

Not applicable because small mine and impacts are negligible.

**h. Solid Waste:**

Not applicable because small mine and impacts are negligible.

**6. Biological Environment**

**Anticipated Impacts:**

- ❖ **Aquatic environment-** Proposed mining of the dry bed of the river, so no possibility of disturbance of aquatic life.
- ❖ **Flora and Fauna-** The mining activity will have insignificant effect on the existing flora and fauna. The project area is surrounded with agricultural land. It was found that the sand mining activity will not have any significant impact on the biological environment of the region.

**Mitigation Measures:**

- ❖ Improvement in riverbank stability.
- ❖ Large woody debris in the riparian zone will be left undisturbed or replaced when moved and not be burnt.
- ❖ Vegetative debris will not be stored within the mine lease area.
- ❖ Operation and storage of heavy vehicles within riparian habitat will be restricted.
- ❖ Covering of loaded vehicles to reduce dust emission, which may harm surrounding agricultural crops and other plant species conservation of biological diversity of plants, birds, and animals.
- ❖ Greenbelt Development and Bio-Diversity Preservation Plantation activities will be carried out at the bank of the river and along the haul roads. This activity will help for maintaining ecology and environment of the area.

**5 Project Benefits**

The proposed expansion project will lead to the following benefits:

- Sand is available for Building and Construction work and by regular removal of sand there is no possibility of flood.
- This project will contribute additional revenue to the state Exchequer in the form of revenue.

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- The project will result in the employment opportunities to the unskilled/skilled local people. Thereby, the quality of life of the employed people will increase.

**6 Sand Ghat Closure Plan**

S. No	Head	Area put on. use at start of plan [in Ha]	Additional Requirement during Plan period [in Ha]	Total [in Ha]	Area considered as	Net consider for calculation
1	Area under mining / pit	-	1	1	1	1
2	Area under dump	NIL	---	---	---	---
3	Infrastructure Workshop Administrative Building etc.	--	--	--	--	--
4	Roads	--	--	--	--	--
5	Mineral reject	--	--	--	--	--
6	Green Belt Plantation /Soil dump	--	--	--	--	--
7	Tailing Dam /pond	--	--	--	--	--
8	Effluent Treatment Plant	--	--	--	--	--
9	Mineral storage	--	--	--	--	--
10	Township area	--	--	--	--	--
11	Other to specify	--	--	--	--	--
<b>GRAND TOTAL</b>			1	1	1	1

- ❖ Mining will be avoided during monsoon and floods; this will allow the sand deposit to replenish.
- ❖ Gabion structure will be constructed for the sand to replenish during monsoon season.

**7 Planning brief:**

The proposed project is opencast manual sand mining activity.

Supply demand ratio:

Information required on demand and supply of district (2023-24)			
S.No.	Name of District	Total sand Demand of District in Brass	Total Sand Available in district in Brass

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1	Jalgaon	191380	104531
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**8 Compliance of earlier Environmental Clearance**

- ❖ Savkheda sand spot of Savkheda village of Amalner tehsil has got environmental clearance in the year 2017-2018 but the sand ghat didn't get a response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot

**9 Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020.**

- ❖ District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- ❖ Appropriate feedback and its redressal mechanism shall also be made operational.
- ❖ Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- ❖ Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- ❖ The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- ❖ Printed on Indian Bank Association (IBA) Approved
- ❖ Magnetic Ink Character Recognition Code (MICR) paper
- ❖ Unique Barcode
- ❖ Unique Quick Response Code (QR)
- ❖ Fugitive Ink Background
- ❖ Invisible Ink Mark
- ❖ Void Pantograph
- ❖ Watermark
- ❖ GPS BASED VEHICLE TRACKING SYSTEM
- ❖ CCTV Camera

**Cluster certificate with reference to the EIA Notification 2006 amended from time to time with specific remarks on the cluster formation in the periphery of the proposed sand ghat along with area map showing distances between adjoining sand mine areas.**

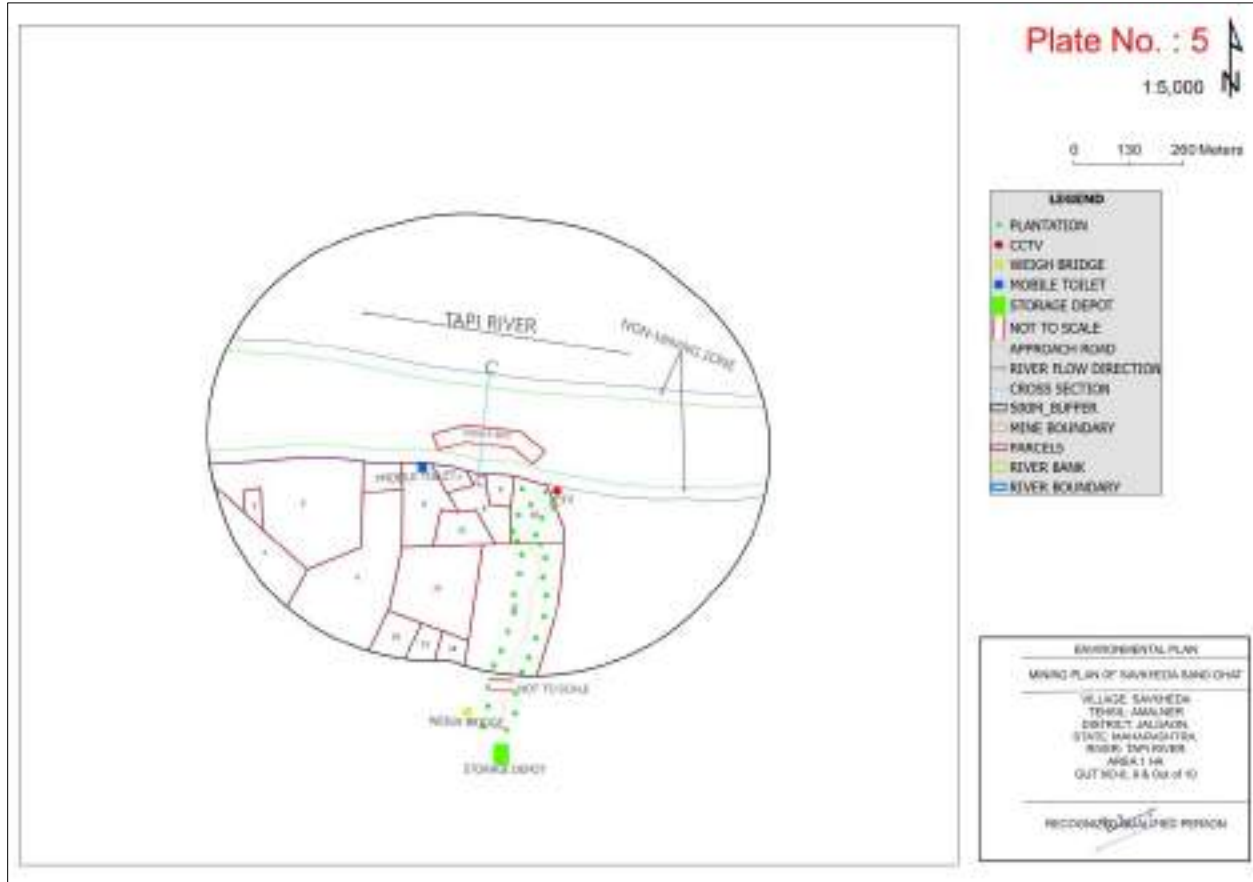
Savkheda does not form a cluster.

**Savkheda sand spot over an extent of 1Ha At Tapi River Bed Gut No.8, 9 & Out of 10, Savkheda Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

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**10 Layout of proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc.**

Proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc. layout is given below:



**11. Proposed approach road for transport of mined sand from sand ghat to the storage area and consent of storage area from the concerned landowners is an after-auction activity to use their land as approach road.**

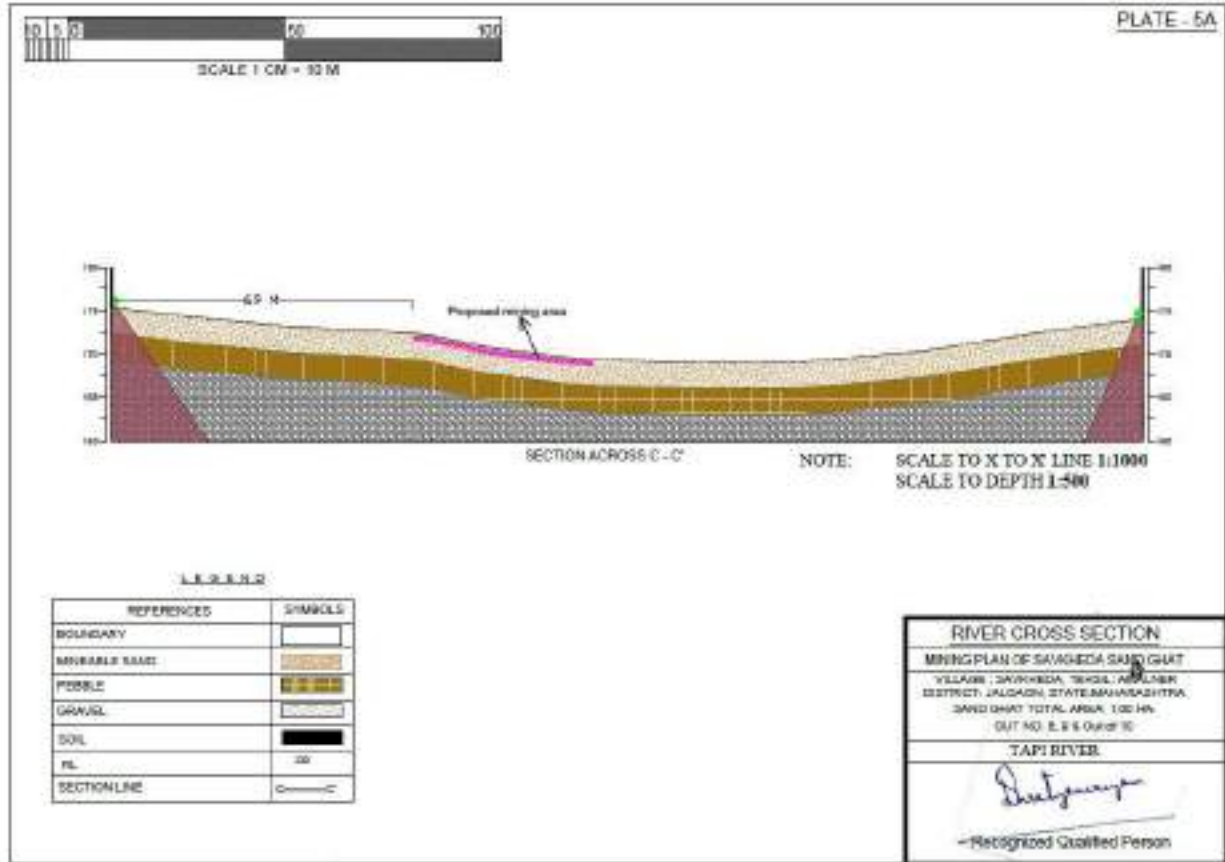
The proposed approach road length is at 631m and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the river bank. Consent of road submitted by Jalgaon Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from land owner.

**12. Cross -Section of riverbed showing distance of proposed sand mine area from the riverbank and other details as prescribed in the Enforcement & Monitoring Guidelines for sand mining published in January 2020 by MoEF&CC.**

Cross section of riverbed is shown below:

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**13. Details of District Level Task Force committee meetings and status of compliance of its recommendations if any.**

District Level Task Force Committee Meeting details is enclosed.

**14. Methodology for Sand Mining:**



**Savkheda sand spot over an extent of 1Ha At Tapi River Bed Gut No.8, 9 & Out of 10, Savkheda Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

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**Conclusion:**

As per above data sedimentation yield for Tapi River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**16 PP to submit details of proposed plantation plan along with its location and requisite permission to be obtained from the Competent Authority.**

Plantation details are presented below:

<b>Location of greenbelt</b>	Both sides of approach road, On the riverbanks of both sides of the sand spot & nearby open areas. Haul Road outside riverbed.
<b>No. of plants to be planted</b>	758
<b>Spacing of plants</b>	4 m grid interval
<b>Species selected</b>	Native species

Tree species recommended for Plantation:

<b>Botanical name</b>	<b>Local name</b>	<b>Importance</b>
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

**17 BUDGET FOR CORPORATE ENVIRONMENT RESPONSIBILITY (CER)**

About 2% fund of the project cost is allocated for Corporate Environment Responsibility (CER) activities as presented in below Table:

**Savkheda sand spot over an extent of 1Ha At Tapi River Bed Gut No.8, 9 & Out of 10, Savkheda Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

SNo.	Budget Allocated	Budget (In INR)
1	Installation of one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	25000
3	Needed Repairing work with consultation of Grampanchayat	25000
4	Community Infrastructure Development(Steel fencing to ZP school with consultation of Grampanchayat)	70000
Total		2,00,000

**18 Environmental Management Plan (EMP)**

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR **224250** and recurring cost provision of about INR **327000** has been kept in the project cost towards the environmental protection, control and mitigation measures and implementation of the EMP, this cost is born by bidder / lease holder. The budgetary cost estimate for the EMP is given in Table.

**Table 6: Environmental Budget**

Savkheda			EMP Budget		
SNo.	Component	Description	Capital cost Rs.	Recurring Cost Rs.	Total Cost in Rs
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	55000	55000
3	Approach Road Maintenance		-	45000	45000
4	Green Belt Plantation	Along the River Bank	31250	-	31250
		Along the Approach Road	158000	-	158000
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	5000	-	5000
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	45000	45000
7	Security	Display Boards and other security measures	15000	-	15000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health	-	32000	32000



**Savkheda sand spot over an extent of 1Ha At Tapi River Bed Gut No.8, 9 & Out of 10, Savkheda Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

		check-up (1000Rs./ Employee)			
9	Tarpaulin Cover (5000 INR per one Cover)		15000	-	15000
<b>Total</b>			<b>224250</b>	<b>327000</b>	<b>551250</b>

**19 Public Consultation Report**

Amalner					
S.No	Villager Name/Village,Taluka	Type of Person (Villager/Government Official)	Query raised by the Villager/Official	Response from the Proponent	Action Plan

**20 Summary and Conclusion**

The environmental status of the project site and study area of 10 km radius is delineated with respect to air, noise, water, land, biological and socio-economic environment the different project activities in the construction and operation phases are identified. To identify the impacts, the interaction between the project activities and different components of the environment are classified phase wise. A summary of the identified impacts is given in the following paragraphs.

During the operational phase, transportation of sand could cause a temporary disturbance to local environment which will be prevented with the proposed mitigation measures proposed in Point no. 4.

Proposed project will not have any major significant negative impacts. The minor impacts arising out during Excavation and Transportation phases can be mitigated with the help of the proposed Environmental Management Plan.

In general, Sand excavation from Savkheda Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

### **PRE-FEASIBILITY REPORT**

The Savkheda Sand Spot is situated at Village Savkheda, Taluka Amalner, District- Jalgaon. Sand Spot is 1Ha of area in Gut No 8, 9 & Out of 10 of Savkheda village of Amalner Tehsil, Jalgaon district. Detail of the project is summarised below

- District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- District Collector Jalgaon appointed M/s Integrated Precision Systems & Services Pvt. Ltd., for preparation of Mining Plan and grant of environmental clearance.
- Applicant proposed to auction the said Sand Spot over an area of 1Ha area and identified for preparation of mining plan and for grant of Environmental Clearance.
- Mining Plans are prepared by Recognized Qualified Person and approved by Directorate of Geology & Mining Govt. of Maharashtra.
- About 3533 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Tapi river bank.

#### **1. Physiography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 163 to 165 from MSL i.e 2m. The Highest contour value is 165 and lower is 163. The flow direction of TAPI river is towards SW

#### **2. Local Geology**

The local geology is Sand of various size up to depth of 2.5- 3meter.

#### **3. Details of Exploration**

**Savkheda sand spot over an extent of 1Ha At Tapi River Bed Gut No.8, 9 & Out of 10, Savkheda Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the river bed.

Mining - The mining will be continued with present method of open cast mining by cutting slice of 0.5m of Sand along topo-relief, by advancing from SW to NE direction as per allotted area by auction. The production can be at the rate of 10000 Cu.m or 3533 brass i.e. 1 year from the date of mining plan approval, the size of pit at the end will be 1Ha.

**Introduction of the project/ background information**

The Savkheda Sand Spot has been kept for Auction which is situated at Village Savkheda , Taluka Amalner , and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

**i) Brief description of project**

The Sand Spot has sufficient Reserve of Sand to work at 10000 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m area of Sand by advancing from North to South direction as per allotted Sand Spot area and handling of material with the help of labourer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**ii) Need for the project**

The Sand or Sand Spot under reference is aimed at exploring Sand as ROM in various sizes i.e. fine to Coarse grain which is Transported to consumer site in outside Sand Spot area, for the infrastructure development i.e. Construction activity to produce Concrete for putting in the floor, roof- slabs, Column, Pillars, Bridges & Dam construction.

**3. Project Description**

This mining project is an independent project and not an interlinked project.

**i) Location**

Savkheda is a small Village in Amalner Taluka in Jalgaon District of Maharashtra State, India. It comes under Savkheda Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 36KM towards SE from District headquarters Jalgaon. The Sand Ghat is 3400KM from State capital Mumbai.

Area covered in SOI Toposheet No- 46P/4.

The boundary pillars of Sand Spot area are given below with GPS values.

<b>Boundary Points Savkheda</b>	<b>Latitude</b>	<b>Longitude</b>
BP1	21° 8'51.15"N	75°14'35.20"E
BP2	21° 8'50.18"N	75°14'34.28"E

**Savkheda sand spot over an extent of 1Ha At Tapi River Bed Gut No.8, 9 & Out of 10, Savkheda Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

BP3	21° 8'51.44"N	75°14'32.75"E
BP4	21° 8'51.88"N	75°14'29.19"E
BP5	21° 8'51.28"N	75°14'26.95"E
BP6	21° 8'52.53"N	75°14'26.57"E
BP7	21° 8'53.19"N	75°14'29.14"E
BP8	21° 8'52.72"N	75°14'33.34"E

**ii) Alternate Sites**

No alternate site is proposed.

**iii) Magnitude of Operation**

Proposed period for mining of sand will be decided by the office of district collectorate 10000 cu.m. will be excavated during the period.

**iv) Project description-mining details**

The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 250m L X 40m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable. The Sand Spot has sufficient Reserve of Sand to work at 10000 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m slice of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**v) Raw material, marketing & transport of ore**

The proposed sand spot will be auctioned, and successful bidder will be responsible for carrying out mining operations as per environmental terms and conditions, approved mining method as per approved mining plan and other terms and conditions. The loading of Sand generated to the tractor/tipper/dumpers will be done by loaders & material transported to the Dealer site.

**vi) Resource optimization, recycle, reuse**

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

**vii) Water & energy requirement**

The major water requirement in the lease area is for dust suppression and for drinking use. The total water requirement is estimated as 8.4 KLD the required water for dust suppression can be arranged

**Savkheda sand spot over an extent of 1Ha At Tapi River Bed Gut No.8, 9 & Out of 10, Savkheda Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

through tankers from nearby village and drinking water will be provided in earthen pots for labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

**viii) Quantity of waste & scheme for management**

There will not be any waste generation within the lease area.

**ix) Schematic Representations**

It is a proposal of opencast manual sand mining from river bed. Mining plan is approved by the competent authority.

**4. Site Analysis**

**i) Connectivity**

Savkheda is a small Village in Amalner Taluka in Jalgaon District of Maharashtra State, India.

The sand spot area is connected to approach road at a distance of 631m in South direction. Dharangaon Railway Station is present at a distance of 15km.

**ii) Land Use, form & Ownership**

The ultimate land use pattern for the lease area of 1Ha. will be consisting of

- |                                    |   |          |
|------------------------------------|---|----------|
| 1. Mining Area                     | : | 1Ha.     |
| 2. Construction of Temporary Roads | : | 0.00 ha. |
| 3. Total                           | : | 1Ha.     |

At present ownership of this sand spot area is in the hand of Govt. of Maharashtra, after approval of mining plan and EC quarry area will be transfer to bidder after auction.

**iii) Geology**

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

**Existing land use pattern**

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

**Social-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- A. The mining operations will provide direct & indirect employment village people.
- B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- C. Local work force will be given first preference for employment.

**Savkheda sand spot over an extent of 1Ha At Tapi River Bed Gut No.8, 9 & Out of 10, Savkheda Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

- D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area).

**Planning brief:**

**The proposed project is opencast manual sand mining activity.**

**Supply demand ratio:**

<b>Information required on demand and supply of district (2023-24)</b>			
<b>S.No.</b>	<b>Name of District</b>	<b>Total sand Demand of District in Brass</b>	<b>Total Sand Available of district in Brass</b>
1	Jalgaon	191380	104531

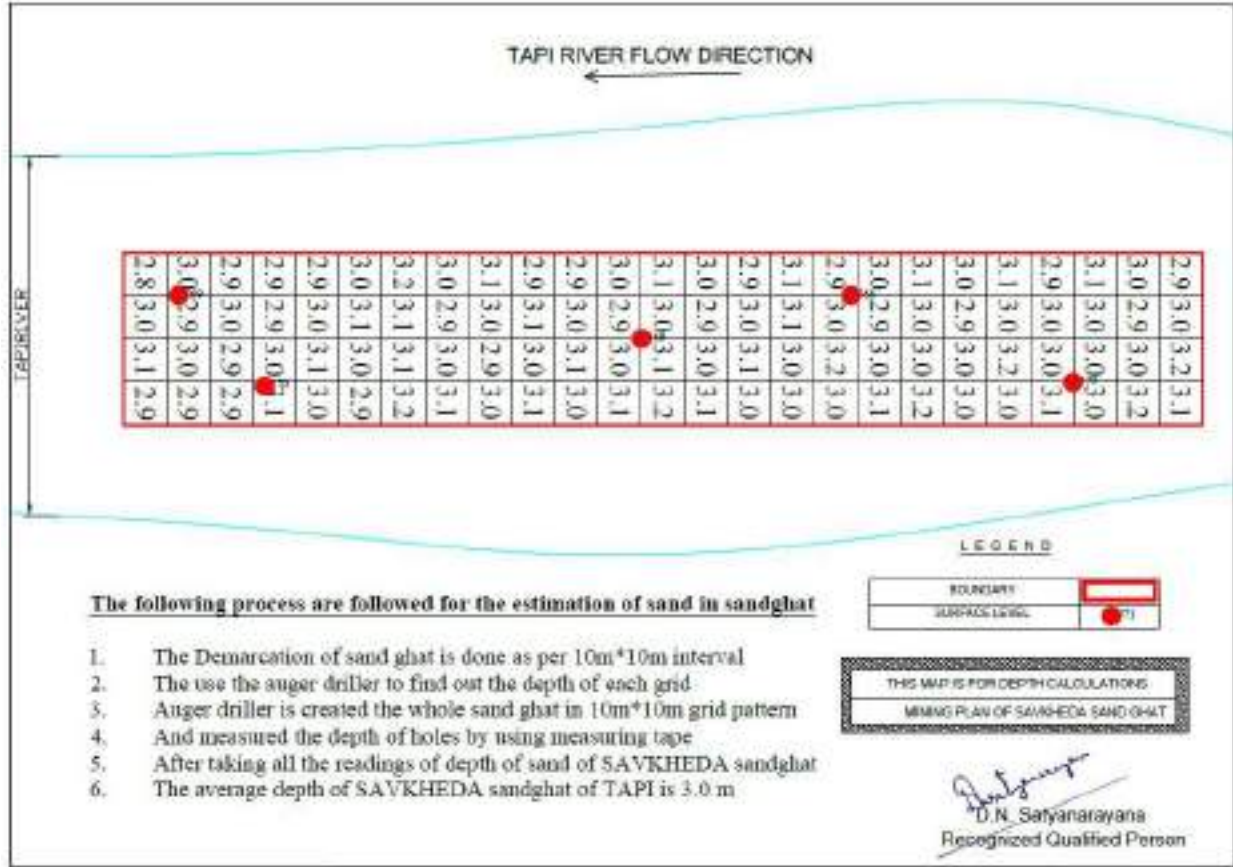
**Replenishment:**

- Area of deposition and erosion was calculated for each cross-section after giving due regard to stability & safety of active channel banks & other features of importance.
- DGPS and other survey tools have been used to define topography, contours and offsets of lease area.
- Contour & elevation benchmarks are provided with the baseline data for assessing pre and post-study period scenario.
- Physical benchmarks are fixed at intervals (1 in 30 m) & Reduced Levels (RL) are validated from a nearby standard RL.
- These RL are engraved on a steel plate (Bench Plate) & are fixed & placed at locations which are free from any damages & are available in pre and post-study period.
- Bench plates are available for use during the mining period as reference for all mining activity.
- Baseline data on elevation status for a grid of 10 m x 10 m is taken to ensure the accuracy in the assessment.
- It was made sure that two consecutive cross-sections in longitudinal and lateral direction is not be more than 10-meter distance apart.
- Changes have been observed in the elevation in pre and post scenario at each node and were depicted in graphical forms with an appropriate scale for estimating the area of deposition & erosion.
- Elevation level was placed in reference to the nearest bench-plates established for the purpose.
- The levels (MSL & RL) of corner point of each grid were identified and safety barriers (Non-Mining) are demarcated as restricted in consensus with Mineral Concession Rules of respective State, and the provision mentioned in this Sustainable Sand Mining Management Guidelines.
- A clear identification was highlighted between grids under mineable and grids under the non-mineable area. These baseline data (pre and post) was subjected to stimulation

**Savkheda sand spot over an extent of 1Ha At Tapi River Bed Gut No.8, 9 & Out of 10, Savkheda Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

- with the help of data mine software to derive at the replenishment area and corresponding volume and estimated weight.
- The database was structured in a tabulated form clearly depicting the nomenclature of the section lines, latitude and longitude of the starting point, chain-age and respective levels of all the points taken on that section line.
  - Net area was derived after summation of area of deposition minus area of erosion for each cross-section.
  - Volume was estimated by multiplying distance between two cross-sections with average of net area of these two consecutive cross-sections.
  - One sample per 900 square meters (30 m x 30 m) was preferred for sample density for assessment of bulk density for estimation of deposition rate.
  - Care was taken that the sample for assessment of bulk density is taken from the deposition zone & not from erosion.

**Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.**



**DANDY-BOLTON EQUATION**

1. **For Runoff Less Than 2 Inches**  
S=1280\*(Q)\*0.46\*(1.46-0.26log(A)) \*F

**2. For Runoff More Than 2 Inches**

$$S=1958(Q)(e^{-0.055Q})(1.43-0.26\log(A))$$

Where

S=sediment yield of stream (t/yr./km<sup>2</sup>),

Q= average annual runoff (m<sup>3</sup>),

A= net drainage area in sq. mile

The sediment yield of Tapi river at Hatnur dam station are 1.08\*10<sup>23</sup> tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation.

**(Source: State Irrigation Department)**

**Conclusion:**

As per above data sedimentation yield for Tapi River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020**

- District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- Appropriate feedback and its redressal mechanism shall also be made operational.
- Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- Printed on Indian Bank Association (IBA) Approved
- Magnetic Ink Character Recognition Code (MICR) paper
- Unique Barcode
- Unique Quick Response Code (QR)
- Fugitive Ink Background
- Invisible Ink Mark



- Void Pantograph
- Watermark
- CCTV at mine lease site
- GPS Based Vehicle Tracking System

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided outside Sand Spot area.

#### **Compliance of earlier Environmental Clearance**

- ❖ Savkheda sand spot of Savkheda village of Amalner tehsil has got environmental clearance in the year 2017-2018 but the sand ghat did not get a response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot.

#### **7. Proposed Infrastructure**

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided in outside Sand Spot area.

#### **8. R&R Plan**

R&R is not involved.

#### **9. Project schedule**

Period of mining for the proposed sand spot will be decided by the Office of District Collectorate.

#### **10. Analysis of Proposal**

Description of the project included in items 1-10 above indicates the following:

1. It is proposed for opencast manual river sand mining.
2. Opencast mining without hampering the present environmental quality of the area.
3. Income to local people is uncertain & initiation of mining will ensure regular income to local people.

#### **11. Costing**

Costing parameters will be decided by the District Authorities.

#### **12. Compliance to Environment Clearance**

Whether there are any serious violation of safety rules and regulation which may jeopardize human health and safety. If so, give details of violations and state the steps proposed to be taken with the time scheduled to rectify the violations:

No, there are not any serious violation of safety rules and regulation, which may jeopardize human health and safety. The applicant has given a commitment in this effect and undertaking also given to follow and implement, as specified in the mining plan. The applicant is undertake to abide and implement any special conditions imposed by various authorities and also to complete formalities under provision of the Mines & Mineral (Development & Regulation) Act, 1957 and the Bombay Minor Mineral rules, the Mineral Conservation and Development Rules, 1988 as amended, the Maharashtra Minor Minerals Extraction

**Savkheda sand spot over an extent of 1Ha At Tapi River Bed Gut No.8, 9 & Out of 10, Savkheda Village, Tehsil- Amalner, Jalgaon District, Maharashtra.**

(Development and Regulation) Rule 2013, MoEF&CC Notification S.O. 141 (E) dated 15th January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, Sustainable Sand Mining Management Guidelines 2019, Sand Mining Policy 2020

**13. Any Other Information:**

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule-2013, MoEF&CC Notification S.O. 141 (E) dated 15<sup>th</sup> January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.05.1994 and 04.09.2006.

**Risk Assessment for Savkheda Sand Spot**

**1. Introduction**

A main principle of risk assessment is that it should take place before any changes are made. Risks should be assessed and control measures are put into action before new work is introduced or systems are changed. The process should influence budgets and allocation of resources, rather than being an afterthought when the decisions have already been made.

The risk management process is continuous, with well-defined steps that support better decision making by contributing greater insight into risks and their impacts. Risks from all sources are identified and once they pass the materiality threshold, a formal process begins in which causal factors and consequences are identified and the correlation with other risks and the current risk mitigating strategy is reviewed. One of the challenges is to ensure that mitigating strategies are geared to deliver reliable and timely risk information to support better decision-making.



The mining operations at SAVKHEDA SAND SPOT are subjected to the risks and hazards normally encountered in open-cast mining operations. These risks include operational risks relating to

---

materials handling, accidents, removing material from quarry area. Mining processes also rely on key inputs, for example fuel. Appropriate insurance can provide protection from some, but not all, the costs that may arise from unforeseen events. If any of these risks should materialize, such an event could result in serious harm to employees and contractors, delays in production, increased production costs and possible increase in liabilities.

Disruption to the supply of key inputs, or changes in their pricing, may have a material and adverse impact on SAVKHEDA SAND SPOT asset values, costs, earnings and cash flows. Failure to meet production target results in increased unit costs. The impact is more pronounced at operations with a high level of fixed costs. Mitigation strategies include efforts to secure strategic supplies at competitive prices, energy reduction, and application of group water management guidelines, adoption of lean production principles and practices and business improvement initiatives to reduce unit costs.

There are certain aspects which should be taken care of, in a quarrying plan with accordance of risk management.

<b>Components</b>	<b>Risk Involved</b>
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
Fire	Only trucks and tractors will make use of diesel for transportation. Diesel is not so highly inflammable but accidental fires can take place.
Road Accidents	Vehicles are used for transporting the material from quarry area to the buyer's location. Due to some improper maintenance of the vehicle a road accident can occur leading to fatal results.

To minimize the risk, certain measures can be taken like implying safety rules, facilities of basic first aid near the site and having training for the workers about personal safety.

Disaster Management Plan is envisaged with a goal to prevent hazards and accidents at work places by careful design, operation, and maintenance of equipment's. All safety precautions and provisions of Metalliferous Mines Regulation-1961 will be strictly followed. Suitable control measures will be adopted to take care of hazards/disasters that may occur during mining operation.

- No mining activities during rainy days or just after heavy rain.
  - Fire fighting, first aid provisions & safety appliances will be made available to the staff and their use regularly checked
  - Regular maintenance of all haulage roads & mining machinery as per manufacturer's guidelines will be done
-

**APPENDIX VIII  
(See paragraph 6)**

**FORM 1 M**

**APPLICATION FOR MINING OF MINOR MINERALS UNDER CATEGORY 'B2' FOR LESS THAN AND EQUAL TO FIVE HECTARE**

**(I) Basic Information**

(i) Name of the Mining Lease site Takarkhede Part-1 Sand Spot

(ii) Location / site (GPS Co-ordinates):

<b>Boundary Points Takarkhede Part-1</b>	<b>LATITUDE</b>	<b>LONGITUDE</b>
BP1	20°59'39.29"N	75°30'37.11"E
BP2	20°59'33.62"N	75°30'43.54"E
BP3	20°59'32.31"N	75°30'42.23"E
BP4	20°59'37.98"N	75°30'35.80"E

(iii) Size of the Mining Lease (Hectare): 1.4025HA

(vi) Capacity of Mining Lease (TPA): 2477 Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 14.86 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, Maharashtra

**(II) Environmental Sensitivity**

<b>S. No.</b>	<b>Areas</b>	<b>Distance in Kilometer/Details</b>
1	Distance of project site from nearest rail or road bridge over the concerned River, Rivulet, Nallah etc.	Bridge on NH-53, 2.64Km, N
2	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road Any Other Road Electric transmission line pole or tower Canal or check dam or reservoirs or lake or ponds	Jalgaon Railway Station, 4.30Km, SE NH3, 75.5 Km W SH53, 2.8Km, W Highway, 0.69Km, W 0.6Km SW 0.79Km SW Kantai Dam, 3.45Km, S

**Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

Form 1M

Page: 2 of 2

	In-take for drinking water pump house Intake for Irrigation canal pumps	
3	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil
4	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Water bodies: this is the case of river sand mining in Girna River bed; RF, 7.8Km, SE
5	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil
6	Inland, coastal, marine or underground waters	Girna River bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	NH3, 75.5 Km W SH53, 2.8Km, N Highway, 0.69Km, W
9	Defence installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Savkhede Bk, 357m, N
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Jilha Parishad School, 1.9Km, NW Hospital, 1.9Km, NW
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Girna River Bed ( this is the case of river sand mining) RF, 7.8Km, SE
13	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil
14	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse	The mine lease area falls in Seismic Zone III (Moderate), according to the Indian Standard Seismic Zoning Map.

**Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

Form 1M

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	climatic conditions)	
15	Is proposed mining site located over or near fissure / fracture for ground water recharge	No
16	Whether the proposal involves approval or clearance under the following Regulations or Acts, namely:- (a) The Forest (Conservation) Act, 1980; (b) The Wildlife (Protection) Act, 1972; (c) The Coastal Regulation Zone Notification, 2011. If yes, details of the same and their status to be given.	No
17	Forest land involved (hectares)	Nil
18	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Orders or directions of the Court, if any, and its relevance with the proposed project.	Nil

***Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Village, Tehsil- Erandol, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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## **ENVIRONMENTAL MANAGEMENT PLAN**

### **1 Introduction**

Ministry of Environment, Forest & Climate Change (MoEF&CC) Notification 2006 and Sustainable Sand Mining Management Guidelines 2016 and as per provision in Mines and Minerals (Development and Regulation) Act 1957 Schedule 60 section 15, Govt Of Maharashtra makes a Minor Mineral Extraction Rules 2013 to extract all the minor mineral in scientific way so that there is no adverse impact on Environment and Climate. To extract every minor mineral from any land (either Government or Private) there is provision of mining plan which is approved by competent authority; For long term leased minor mineral (5 – 10 years period) and Sand excavation from river bed, Senior Deputy Director of Directorate of Geology and Mining is a Competent authority, for short term Temporary permits which is valid for one year, Committee headed by Hon. Collector is Final authority to Approved the District Mining Plan.

As per Minor Mineral Extraction Rules 2013 Rules 70, Disposal of sand from River bed, Nallah and creeks by way of public auction, in this regards Govt resolution Gaukhni -10/0615/case No. 289/kha dated 3rd January 2018 is applicable in entire state. As per Enforcement & Monitoring Guidelines for Sand Mining 2020 Sustainable sand mining management guidelines 2016, Standard Environment condition for sand mining and sustainable mining practices, district level survey report should be prepared and area suitable for mining and area prohibited for mining be identified.

### **2 Project Description**

Takarkhede is a small Village in Erandol Taluka in Jalgaon District of Maharashtra State, India. It comes under Takarkhede Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 29KM towards N from District headquarters Jalgaon. The Sand Ghat is 346 KM from State capital Mumbai.

Area covered in SOI Toposheet No- 46P/5 and 46P/9

The boundary pillars of Sand Spot area are given below with GPS values.

#### **Table 1: Salient Features of the Project**



**Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

Items	Details																		
Location	Village Takarkhede, Tehsil- Erandol District-Jalgaon, Maharashtra.																		
Latitude and Longitude	<table border="1"> <thead> <tr> <th colspan="3">Boundary Points Takarkhede Part-1</th> </tr> <tr> <th></th> <th>LATITUDE</th> <th>LONGITUDE</th> </tr> </thead> <tbody> <tr> <td>BP1</td> <td>20°59'39.29"N</td> <td>75°30'37.11"E</td> </tr> <tr> <td>BP2</td> <td>20°59'33.62"N</td> <td>75°30'43.54"E</td> </tr> <tr> <td>BP3</td> <td>20°59'32.31"N</td> <td>75°30'42.23"E</td> </tr> <tr> <td>BP4</td> <td>20°59'37.98"N</td> <td>75°30'35.80"E</td> </tr> </tbody> </table>	Boundary Points Takarkhede Part-1				LATITUDE	LONGITUDE	BP1	20°59'39.29"N	75°30'37.11"E	BP2	20°59'33.62"N	75°30'43.54"E	BP3	20°59'32.31"N	75°30'42.23"E	BP4	20°59'37.98"N	75°30'35.80"E
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BP4	20°59'37.98"N	75°30'35.80"E																	
Sand spot area (In Ha)	1.4025																		
Proposed production capacity (In Brass)	7012																		
Manpower Requirement (considering 3-month period)	22 labours + 1 mate + 1 Supervisor=24manpower																		
Infrastructure Requirement (As per Govt Resolution 3rd January 2018)	<ol style="list-style-type: none"> <li>1. Room / Hut for Official records</li> <li>2. Electricity / Battery for Running CCTV on 24X 7 daily.</li> <li>3. One Computer / Android base Mobile for the online generation of Invoice number.</li> </ol>																		
Water requirement & source	4.8 KLD – Tankers from nearby village.																		
Project cost INR (Lakh)	14.86 Lakhs																		

**3 Baseline Environmental Status**

**Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

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**i. Topography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Amalner, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Amalner, Erandol, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Amalner, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 200 to 202 from MSL i.e 2m. The Highest contour value is 202 and lower is 200. The flow direction of Girna river is towards SW.

**ii. Hydrology**

The will be no change in water table during mining operation, as the depth of mining shall be restricted to 0.5m water level, which is less likely to affect surface level or ground water table. There is no proposal of any stream modification/diversion due to this mining activity hence there will be no impact on flow of water.

**iii. Soil Environment**

***Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Village, Tehsil- Erandol, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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The area is not having any top soil or fertile soil. The depth of mining shall be restricted to 0.5m. There is no major impact on soil of the study area due to mining activities

**iv. Land Use Land Cover**

The project area does not consist of any forest land. It does not consist of any human habitations. Any change in scope of mining as per approved mining plan can lead to bank erosion /cutting and thereby river channel shifting degradation of land, causing loss of properties and degradation of surrounding landscape.

**v. Water Environment**

There will not be any waste water discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 0.5m only so there will not be any intersection with ground water table. It is observed from the dug well in the adjacent plain area and in the nearby villages that the ground water table varies depending upon seasonal variations. The depth to water levels in the district ranges from 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 0.5m that too within the river course and the total mining operation will be achieved through manual means, there will be no effect on ground water table. All the stipulations of MoEF for sand mining and guidelines as per the Maharashtra Minor Mineral Extraction [Development and Regulation] Rules, 2013 of Section 15 of MMDR Act 1957 [67 of 1957] will be followed. Hence, impact on water regime due to the proposed sand mining is not anticipated.

1. Precautionary measures will be initiated for closing the operation and shifting the men and transport vehicles prior to onset of monsoon.
2. No oils or lubricants will be discharged in the sand to avoid water pollution.

**vi. Climate**

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

**vii. Biological Environment**

The project is only of extraction of minor minerals viz. sand from the river quarry.

Flora: The area is completely barren and devoid of any vegetation in the river. Only few thorny bushes are seen on the banks of the River.

Fauna: As there is no forest cover, no wild life can be seen in this area.

1. There will be no significant impact of the river quarry mining project on the biological diversity found in the 5km. radius of the site.
2. The mining lease area is in non-forest land i.e. sandy river quarry where presence of fauna is not at all seen. As such, there will be no adverse impact of the manual mining activity on fauna around the mining lease area.

***Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Village, Tehsil- Erandol, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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3. No adverse impacts will be envisaged on the existing aquatic fauna, on downstream side (away from site) as the mining confined to above water level only and at all touching/disturbing water table.

**viii. Socio-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- A. The mining operations will provide direct & indirect employment village people.
- B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- C. Local work force will be given first preference for employment.
- D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area)

**4 Impact assessment report along with proposed mitigation measures.**

Preparation of Environmental Management Plan is required for formulation, implementation, and monitoring of environmental protection measures during and after commissioning of projects. The plan should indicate the details as to how various measures have been proposed to be taken including cost components as may be required.

**1. Land Environment**

The type of mining and the characteristics of the mineral deposit both affect the degree to which mining disturbs the landscape. Sand Mining and allied activities will be done in the fluvial plain formed by river meandering. Mining of sand may cause a few environmental degradations.

**a. Anticipated Impacts:**

- ❖ Damage of riverbank due to access ramps to riverbed, may cause soil erosion.
- ❖ Destruction of river bank hinterland and ecological due to extraction of sand by probability of damage to the flood control bunds (built along the river side) due to heavy movements of vehicles over the bund to approach the mine area and further during transportation for sand from the mine area.
- ❖ Improper disposal of packing material, carried by the workers like used sachet/ gutka /pan masala pouches.
- ❖ Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations, borehole users due to dust, noise and it also causes traffic hazards.
- ❖ Surface degradation due to road network.

**b. Mitigation Measures:**

- ❖ Safety distance of 3 meter or 1/10th of the width of the river whichever is more will be left from both the banks of the river (as per "Sustainable sand mining guidelines").

**Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

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- ❖ No foreign material like polythene bag, jute bag and useless articles should be allowed to remain/spill in river bed and catchment area, or no pits/pockets will be allowed to be filled with such material.
- ❖ Minimum number of access roads to river bed for which cutting of river banks will be avoided and ramps are to be maintained.
- ❖ Care will be taken to ensure that ponding is not formed in the river bed.
- ❖ Mining will not exceed beyond the allowed extraction capacity.
- ❖ Green belt will be developed along the haul road and the bank of rivers of mine premises and near the sand mining site. While selecting the plant species, preference will be given for planting native species of the area.

**3. Water Environment**

**a. Anticipated Impacts:**

- ❖ As the project activity is carried out in the dry part of river bed, none of the project activities will affect the water environment or riverbank habitats. Project activities will not have any adverse effect on the physical components of the environment and therefore may not have any effect on the recharge of ground waters or affect the water quality. Monitoring of water quality will be checked yearly.

**b. Mitigation Measures:**

- ❖ Mining is avoided during the monsoon season and at the time of floods. This will help in replenishment of sand in the riverbed.
- ❖ Mining below subterranean water level will be avoided as safeguard against environmental contamination and over exploitation of resources.
- ❖ River stream will not be diverted to form in active channels.
- ❖ Utmost care will be taken to minimize or control leakage vehicles to be used for sand transportation.
- ❖ The washing of tractor trolleys in the river will be avoided.
- ❖ The contractor will follow all guidelines and rules for proper and scientific method of mining during the period of extracting the sand.

**4. Air Environment:**

**a. Anticipated Impacts:**

**Due to Haul Road/ Access Road:**

- ❖ Plying of tractor trolleys from public road to river sand collection points needs access roads.
- ❖ Majority of such access roads are the same existing roads/tracks being used by pedestrians/cart owners. Movement of heavy vehicles sometimes causes problems to cattle, agriculture land, and human habitations due to dust, noise and movement of public.
- ❖ These environmental problems are felt more as the area is rural in nature.

**Due to Mining process:**

- ❖ Air pollution is likely to be caused at various stages of sand mining operations such as excavation, loading & transportation of material.

**Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

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- ❖ Most of the dust will be generated from loading & transportation. This dust becomes air borne and gets carried away to surrounding areas.
- ❖ The impact on air is mainly localized in nature as the dust particles are not carried to longer distances and the effect is felt within the core zone of the project involving active Sand mining operations.

**b. Mitigation Measures:**

**Mitigation of Impacts on Access Roads:**

- ❖ Movement of the vehicles on the road will be increased; however, unmetalled road in the mining area will be sprinkled with water at regular intervals.
- ❖ In addition to prevent spillage by tractor trolleys over loading should be controlled along with speed limit (1Brass /tractor trolley).
- ❖ Maintenance of haul road will be done on regular basis.

**c. For Fugitive Dust Emission:**

- ❖ To avoid fugitive dust emissions at the time of excavation, regular sprinkling of water will be done on regular basis.
- ❖ Sand is transported to the sites by road through tractor trolleys. The sand carrying vehicles shall be covered by tarpaulin sheets.
- ❖ The Green Belt development will be prepared along the haul roads, which will act as a pollution sink.
- ❖ To minimize the vehicular pollution from the sand transporting vehicles, the following conditions will insist to permit the vehicles of the transporters.
- ❖ The vehicles should be (Bharat-IV stage) compliant and should have pollution control certificate (PUC) issued by appropriate authorities.
- ❖ Regular maintenance of transport vehicles and monitoring of vehicular emission levels at periodical intervals.

**5. Noise:**

**a. Anticipated Impacts:**

Noise environment in this project will be affected only by the equipment at the site and vehicular transportation. Since slight increase in noise levels can be expected.

**b. Mitigation Measures:**

- ❖ Minimum use of Horns at the village area.
- ❖ Timely maintenance of vehicles and their silencers to minimize vibration and Sound.
- ❖ Phasing out of old and worn-out tractor trolleys.
- ❖ Provision of green belts along the road networks.
- ❖ Care will be taken to produce minimum sound during sand loading.
- ❖ Use of Backhoe and ear plugs may be provided to protect the labors working at the site.

**6. Socio-Economic Environment**

This project operation will provide livelihood to the poorest section of the society.

**Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

***Environmental Management Plan***

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**Anticipated Impacts and Evaluation:**

- ❖ The project activities shall not have any adverse impacts on any of the common property resources of the village communities, as the sand mine lease area is not being used for any purpose by any section of the society in this region.
- ❖ There is no R & R involvement in this project.
- ❖ There is no land acquisition in this project.
- ❖ The results of the field survey conducted to understand the knowledge and perception of the people living around the project area gives a clear idea about the need for the project.
- ❖ A major portion of the houses in the study area are semi- pucca type structures.
- ❖ The water source to these areas is from the municipal connection and private bore wells and wells. The awareness level regarding the proposed mining activity is very high. The proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes.

**a. Social and Demographic Profile:**

The workers are from local villages. These people have been provided all welfare from a lessee like medical benefits, insurance, fees for children's education etc. They have some land and cattle for their daily earnings. Additional income earned from the Sand Mining work will improve their living standard. The group of quarries in and around will help to have infrastructure facilities like roads, schools, shops etc. This will improve their social life.

**b. Occupational Health and Safety:**

This is Riverbed Sand Mine. So, the mining activities are comparatively less because the production is not on large scale. Workers do not come across any extreme condition like excessive heat, moisture etc. Workers working around it may come across this dusty environment, which can be managed by providing face mask.

**c. Human Settlement:**

There are no houses in and around lease area. All the due precautions will be taken during mining. Transport of finished products is through the villages. There will be psychological impact of the traffic on the local people. However, the intensity of traffic is less.

**d. Health and Hygiene:**

In general, the health of villagers is moderately good. In the rainy season, the atmospheric condition is unhygienic due to lack of proper drainage and sanitation in the village habitation. Villagers are working in agricultural fields and work as laborers.

**e. Education:**

- a. Mostly education is up to middle standard. Economic condition is in general moderate. So, after this project the standard of education will be increase.

**f. Socio Economic Benefits Arising Out of Mining:**

- a. Generation of employment in the rural area.

**Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

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- b. Improvement in the living standards of the rural people.
- c. Creating of infrastructural facilities like roads, electricity, shops, school etc.
- d. Helping to improve literacy in the area Exploiting natural mineral so generation of revenue.
- e. Helping to sustain construction activity.
- f. Improving the greenery of the area, this is otherwise poor.

**g. Liquid Effluent:**

Not applicable because small mine and impacts are negligible.

**h. Solid Waste:**

Not applicable because small mine and impacts are negligible.

**6. Biological Environment**

**Anticipated Impacts:**

- ❖ **Aquatic environment-** Proposed mining of the dry bed of the river, so no possibility of disturbance of aquatic life.
- ❖ **Flora and Fauna-** The mining activity will have insignificant effect on the existing flora and fauna. The project area is surrounded with agricultural land. It was found that the sand mining activity will not have any significant impact on the biological environment of the region.

**Mitigation Measures:**

- ❖ Improvement in riverbank stability.
- ❖ Large woody debris in the riparian zone will be left undisturbed or replaced when moved and not be burnt.
- ❖ Vegetative debris will not be stored within the mine lease area.
- ❖ Operation and storage of heavy vehicles within riparian habitat will be restricted.
- ❖ Covering of loaded vehicles to reduce dust emission, which may harm surrounding agricultural crops and other plant species conservation of biological diversity of plants, birds, and animals.
- ❖ Greenbelt Development and Bio-Diversity Preservation Plantation activities will be carried out at the bank of the river and along the haul roads. This activity will help for maintaining ecology and environment of the area.

**5 Project Benefits**

The proposed expansion project will lead to the following benefits:

- Sand is available for Building and Construction work and by regular removal of sand there is no possibility of flood.
- This project will contribute additional revenue to the state Exchequer in the form of revenue.
- The project will result in the employment opportunities to the unskilled/skilled local people.

Thereby, the quality of life of the employed people will increase.

**6 Sand Ghat Closure Plan**



**Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

S. No	Head	Area put on. use at start of plan [in Ha]	Additional Requirement during Plan period [in Ha]	Total [in Ha]	Area considered as	Net consider for calculation
1	Area under mining / pit	-	1.4025	1.4025	1.4025	1.4025
2	Area under dump	NIL	---	---	---	---
3	Infrastructure Workshop Administrative Building etc.	--	--	--	--	--
4	Roads	--	--	--	--	--
5	Mineral reject	--	--	--	--	--
6	Green Belt Plantation /Soil dump	--	--	--	--	--
7	Tailing Dam /pond	--	--	--	--	--
8	Effluent Treatment Plant	--	--	--	--	--
9	Mineral storage	--	--	--	--	--
10	Township area	--	--	--	--	--
11	Other to specify	--	--	--	--	--
<b>GRAND TOTAL</b>			1.4025	1.4025	1.4025	1.4025

- ❖ Mining will be avoided during monsoon and floods; this will allow the sand deposit to replenish.
- ❖ Gabion structure will be constructed for the sand to replenish during monsoon season.

**7 Planning brief:**

The proposed project is opencast manual sand mining activity.

Supply demand ratio:

Information required on demand and supply of district (2023-24)			
S.No.	Name of District	Total sand Demand of District in Brass	Total Sand Available in district in Brass
1	Jalgaon	191380	104531

**8 Compliance of earlier Environmental Clearance**

**Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

***Environmental Management Plan***

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- ❖ Hanmantkhede Sim has got earlier Environment clearance in the year 2016-2017. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

**9 Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020.**

- ❖ District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- ❖ Appropriate feedback and its redressal mechanism shall also be made operational.
- ❖ Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- ❖ Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- ❖ The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- ❖ Printed on Indian Bank Association (IBA) Approved
- ❖ Magnetic Ink Character Recognition Code (MICR) paper
- ❖ Unique Barcode
- ❖ Unique Quick Response Code (QR)
- ❖ Fugitive Ink Background
- ❖ Invisible Ink Mark
- ❖ Void Pantograph
- ❖ Watermark
- ❖ GPS BASED VEHICLE TRACKING SYSTEM
- ❖ CCTV Camera

**Cluster certificate with reference to the EIA Notification 2006 amended from time to time with specific remarks on the cluster formation in the periphery of the proposed sand ghat along with area map showing distances between adjoining sand mine areas.**

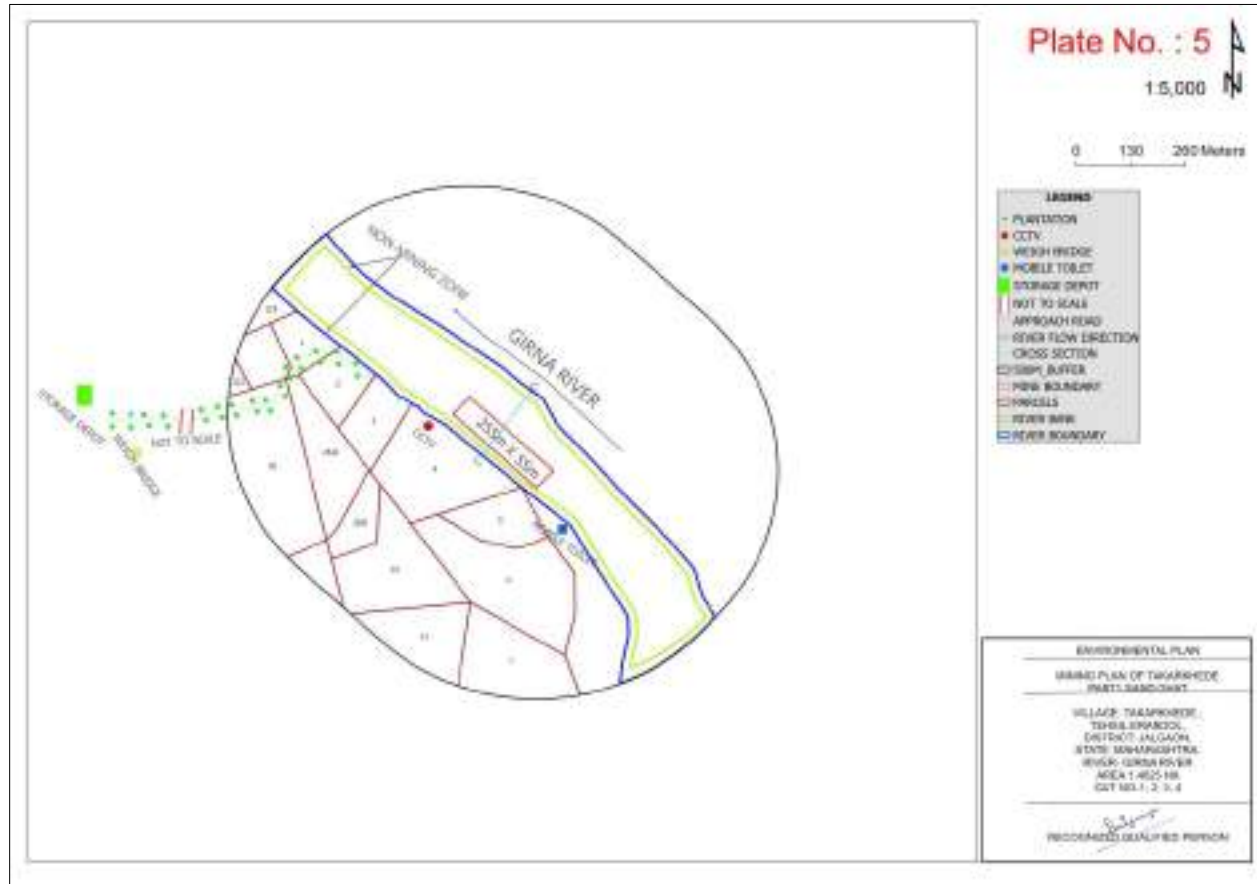
Takarkhede Part-1 does not form a cluster.

**10 Layout of proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc.**

Proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc. layout is given below:

**Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Environmental Management Plan**



**11. Proposed approach road for transport of mined sand from sand ghat to the storage area and consent of storage area from the concerned landowners is an after-auction activity to use their land as approach road.**

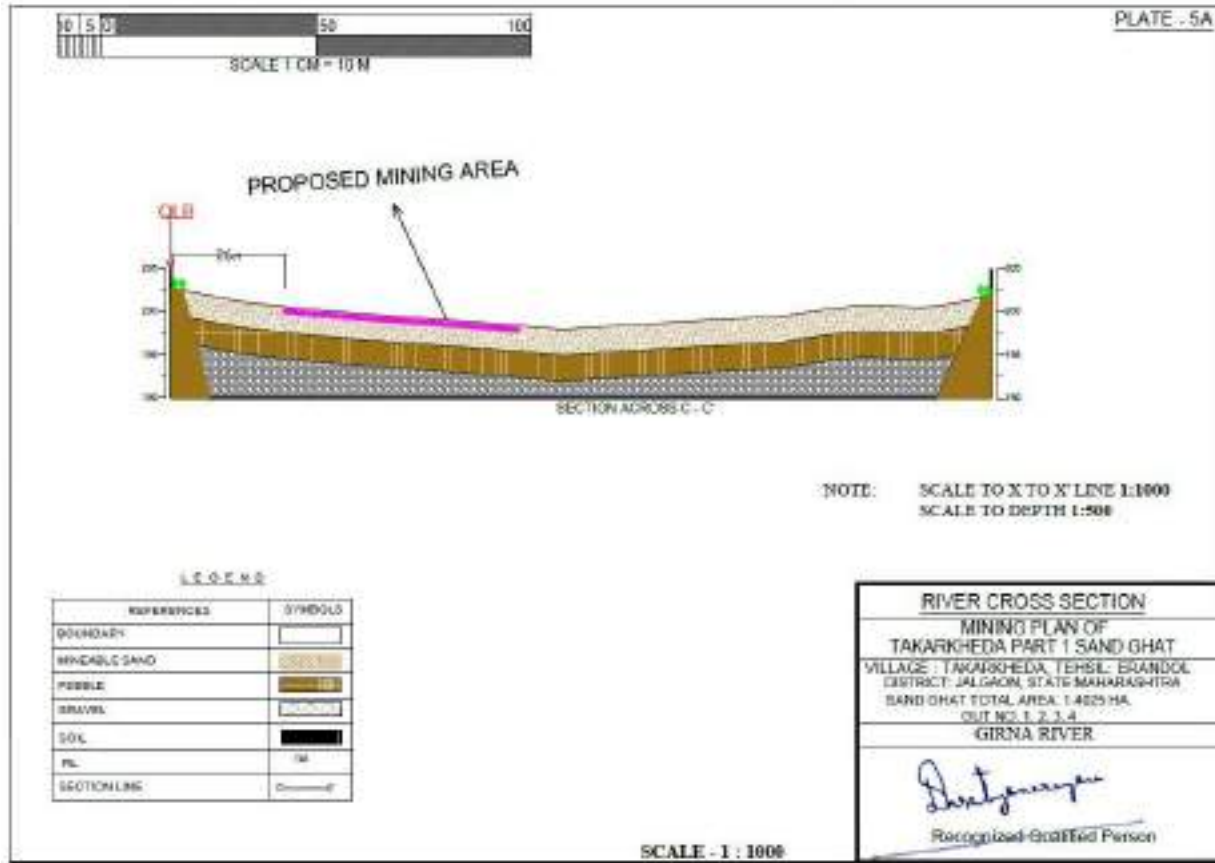
The proposed approach road length is at 987m and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the river bank. Consent of road submitted by Erandol Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from land owner.

**12. Cross -Section of riverbed showing distance of proposed sand mine area from the riverbank and other details as prescribed in the Enforcement & Monitoring Guidelines for sand mining published in January 2020 by MoEF&CC.**

Cross section of riverbed is shown below:

**Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Environmental Management Plan**



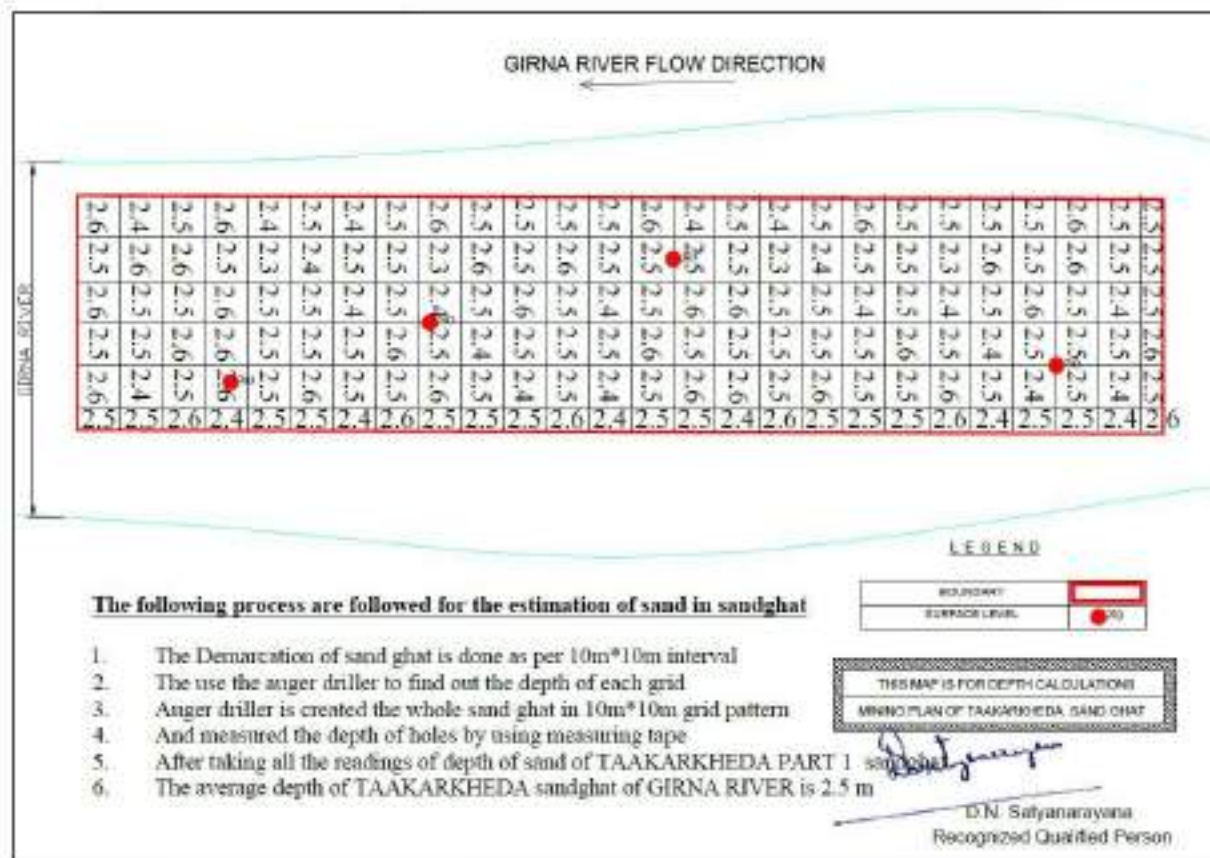
**13. Details of District Level Task Force committee meetings and status of compliance of its recommendations if any.**

District Level Task Force Committee Meeting details is enclosed.

**14. Methodology for Sand Mining:**

**Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Environmental Management Plan**



**15. Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.**

**DANDY-BOLTON EQUATION**

- For Runoff Less Than 2 Inches  
 $S = 1280 * (Q) * 0.46 * (16 - 0.26 \log(A)) * F$
- For Runoff More Than 2 Inches  
 $S = 1958 * (Q) * (e^{-0.055 * Q}) * (13 - 0.26 \log(A))$

Where

S = sediment yield of stream (t/yr./km2),  
 Q = average annual runoff (m3),  
 A = net drainage area in sq. Mile

The sediment yield of Girna river at Girana dam station is 4.612\*1020 tonnes/year/km2 by Dandy-Bolton Equation.

**(Source: State Irrigation Department)**

**Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

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**Conclusion:**

As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**16 PP to submit details of proposed plantation plan along with its location and requisite permission to be obtained from the Competent Authority.**

Plantation details are presented below:

<b>Location of greenbelt</b>	Both sides of approach road, On the riverbanks of both sides of the sand spot & nearby open areas. Haul Road outside riverbed.
<b>No. of plants to be planted</b>	1116
<b>Spacing of plants</b>	4 m grid interval
<b>Species selected</b>	Native species

Tree species recommended for Plantation:

<b>Botanical name</b>	<b>Local name</b>	<b>Importance</b>
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

**17 BUDGET FOR CORPORATE ENVIRONMENT RESPONSIBILITY (CER)**

About 2% fund of the project cost is allocated for Corporate Environment Responsibility (CER) activities as presented in below Table:

**Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

SNo.	Budget Allocated	Budget (In INR)
1	Installation of one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	25000
3	Needed Repairing work with consultation of Grampanchayat	25000
4	Community Infrastructure Development(Steel fencing to ZP school with consultation of Grampanchayat)	70000
Total		2,00,000

**18 Environmental Management Plan (EMP)**

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR **303875** and recurring cost provision of about INR **292830** has been kept in the project cost towards the environmental protection, control and mitigation measures and implementation of the EMP, this cost is born by bidder / lease holder. The budgetary cost estimate for the EMP is given in Table.

**Table 6: Environmental Budget**

Hanmantkhede Sim			EMP Budget		
SNo.	Component	Description	Capital cost Rs.	Recurring Cost Rs.	Total Cost in Rs
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	49350	49350
3	Approach Road Maintenance		-	39480	39480
4	Green Belt Plantation	Along the River Bank	31875	-	31875
		Along the Approach Road	247000	-	247000
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	5000	-	5000
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	30000	30000
7	Security	Display Boards and other security measures	10000	-	10000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health	-	24000	24000

**Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

		check-up (1000Rs./ Employee)			
9	Tarpaulin Cover (5000 INR per one Cover)		10000	-	10000
<b>Total</b>			<b>303875</b>	<b>292830</b>	<b>596705</b>

**19 Public Consultation Report**

Erandol					
S.No	Villager Name/Village,Taluka	Type of Person (Villager/Government Official)	Query raised by the Villager/Official	Response from the Proponent	Action Plan

**20 Summary and Conclusion**

The environmental status of the project site and study area of 10 km radius is delineated with respect to air, noise, water, land, biological and socio-economic environment the different project activities in the construction and operation phases are identified. To identify the impacts, the interaction between the project activities and different components of the environment are classified phase wise. A summary of the identified impacts is given in the following paragraphs.

During the operational phase, transportation of sand could cause a temporary disturbance to local environment which will be prevented with the proposed mitigation measures proposed in Point no. 4.

Proposed project will not have any major significant negative impacts. The minor impacts arising out during Excavation and Transportation phases can be mitigated with the help of the proposed Environmental Management Plan.

In general, Sand excavation from Takarkhede Part-1 Sand Spot will be useful to the developmental work in the district and generate employment opportunities.



### **PRE-FEASIBILITY REPORT**

The Takarkhede Part-1 . Sand Spot is situated at Village Takarkhede , Taluka Erandol, District- Jalgaon. Sand Spot is 1.4025HA of area in Gut No 1 ,2,3,4 of Takarkhede village of Erandol Tehsil, Jalgaon district. Detail of the project is summarised below

- District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- District Collector Jalgaon appointed M/s Integrated Precision Systems & Services Pvt. Ltd., for preparation of Mining Plan and grant of environmental clearance.
- Applicant proposed to auction the said Sand Spot over an area of 1.4025HA area and identified for preparation of mining plan and for grant of Environmental Clearance.
- Mining Plans are prepared by Recognized Qualified Person and approved by Directorate of Geology & Mining Govt. of Maharashtra.
- About 2477 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Girna river bank.

#### **1. Physiography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the riverbanks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 200 to 202 from MSL i.e 2m. The Highest contour value is 202 and lower is 200. The flow direction of Girna river is towards SW.

#### **2. Local Geology**

The local geology is Sand of various size up to depth of 2.5- 3meter.

#### **3. Details of Exploration**

There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the river bed.

Mining - The mining will be continued with present method of open cast mining by cutting slice of 0.5m of Sand along topo-relief, by advancing from SW to NE direction as per allotted area by auction. The

**Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Part-1 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

production can be at the rate of 7012 Cu.m or 2477 brass i.e. 1 year from the date of mining plan approval, the size of pit at the end will be 1.4025HA.

**Introduction of the project/ background information**

The Takarkhede Part-1 Sand Spot has been kept for Auction which is situated at Village Takarkhede, Taluka Erandol , and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

**i) Brief description of project**

The Sand Spot has sufficient Reserve of Sand to work at 7012 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m area of Sand by advancing from North to South direction as per allotted Sand Spot area and handling of material with the help of labourer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**ii) Need for the project**

The Sand or Sand Spot under reference is aimed at exploring Sand as ROM in various sizes i.e. fine to Coarse grain which is Transported to consumer site in outside Sand Spot area, for the infrastructure development i.e. Construction activity to produce Concrete for putting in the floor, roof- slabs, Column, Pillars, Bridges & Dam construction.

**3. Project Description**

This mining project is an independent project and not an interlinked project.

**i) Location**

Takarkhede is a small Village in Erandol Taluka in Jalgaon District of Maharashtra State, India. It comes under Takarkhede Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 29KM towards N from District headquarters Jalgaon. The Sand Ghat is 346 KM from State capital Mumbai.

Area covered in SOI Toposheet No- 46P/5 and 46P/9

The boundary pillars of Sand Spot area are given below with GPS values.

<b>Boundary Points Takarkhede Part-1</b>	<b>LATITUDE</b>	<b>LONGITUDE</b>
BP1	20°59'39.29"N	75°30'37.11"E
BP2	20°59'33.62"N	75°30'43.54"E
BP3	20°59'32.31"N	75°30'42.23"E
BP4	20°59'37.98"N	75°30'35.80"E

**ii) Alternate Sites**

No alternate site is proposed.

**iii) Magnitude of Operation**

Proposed period for mining of sand will be decided by the office of district collectorate 7012 cu.m. will be excavated during the period.

**iv) Project description-mining details**

The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 255m L X 55m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable. The Sand Spot has sufficient Reserve of Sand to work at 7012 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m slice of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**v) Raw material, marketing & transport of ore**

The proposed sand spot will be auctioned, and successful bidder will be responsible for carrying out mining operations as per environmental terms and conditions, approved mining method as per approved mining plan and other terms and conditions. The loading of Sand generated to the tractor/tipper/dumpers will be done by loaders & material transported to the Dealer site.

**vi) Resource optimization, recycle, reuse**

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

**vii) Water & energy requirement**

The major water requirement in the lease area is for dust suppression and for drinking use. The total water requirement is estimated as 4.6 KLD the required water for dust suppression can be arranged through tankers from nearby village and drinking water will be provided in earthen pots for labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

**viii) Quantity of waste & scheme for management**

There will not be any waste generation within the lease area.

**ix) Schematic Representations**

It is a proposal of opencast manual sand mining from river bed. Mining plan is approved by the competent authority.

#### **4. Site Analysis**

##### **i) Connectivity**

Takarkhede is a small Village in Erandol Taluka in Jalgaon District of Maharashtra State, India.

The sand spot area is connected to approach road at a distance of 987 m in South direction. Jalgaon Railway Station is present at a distance of 6km.

##### **ii) Land Use, form & Ownership**

The ultimate land use pattern for the lease area of 1.4025HA. will be consisting of

1. Mining Area : 1.4025HA.
2. Construction of Temporary Roads : 0.00 ha.
3. Total : 1.4025HA.

At present ownership of this sand spot area is in the hand of Govt. of Maharashtra, after approval of mining plan and EC quarry area will be transfer to bidder after auction.

##### **iii) Geology**

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

##### **Existing land use pattern**

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

##### **Social-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- A. The mining operations will provide direct & indirect employment village people.
- B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- C. Local work force will be given first preference for employment.
- D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area).

##### **Planning brief:**

**The proposed project is opencast manual sand mining activity.**

**Supply demand ratio:**

<b>Information required on demand and supply of district (2023-24)</b>
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**Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Part-1 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

S.No.	Name of District	Total sand Demand of District in Brass	Total Sand Available of district in Brass
1	Jalgaon	191380	104531

**Replenishment:**

- Area of deposition and erosion was calculated for each cross-section after giving due regard to stability & safety of active channel banks & other features of importance.
- DGPS and other survey tools have been used to define topography, contours and offsets of lease area.
- Contour & elevation benchmarks are provided with the baseline data for assessing pre and post-study period scenario.
- Physical benchmarks are fixed at intervals (1 in 30 m) & Reduced Levels (RL) are validated from a nearby standard RL.
- These RL are engraved on a steel plate (Bench Plate) & are fixed & placed at locations which are free from any damages & are available in pre and post-study period.
- Bench plates are available for use during the mining period as reference for all mining activity.
- Baseline data on elevation status for a grid of 10 m x 10 m is taken to ensure the accuracy in the assessment.
- It was made sure that two consecutive cross-sections in longitudinal and lateral direction is not be more than 10-meter distance apart.
- Changes have been observed in the elevation in pre and post scenario at each node and were depicted in graphical forms with an appropriate scale for estimating the area of deposition & erosion.
- Elevation level was placed in reference to the nearest bench-plates established for the purpose.
- The levels (MSL & RL) of corner point of each grid were identified and safety barriers (Non-Mining) are demarcated as restricted in consensus with Mineral Concession Rules of respective State, and the provision mentioned in this Sustainable Sand Mining Management Guidelines.
- A clear identification was highlighted between grids under mineable and grids under the non-mineable area. These baseline data (pre and post) was subjected to stimulation with the help of data mine software to derive at the replenishment area and corresponding volume and estimated weight.
- The database was structured in a tabulated form clearly depicting the nomenclature of the section lines, latitude and longitude of the starting point, chain-age and respective levels of all the points taken on that section line.
- Net area was derived after summation of area of deposition minus area of erosion for each cross-section.
- Volume was estimated by multiplying distance between two cross-sections with average of net area of these two consecutive cross-sections.



- The sediment yield of Girna river at Girana dam station is  $4.612 \times 1020$  tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation..

**(Source: State Irrigation Department)**

**Conclusion:**

As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020**

- District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- Appropriate feedback and its redressal mechanism shall also be made operational.
- Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- Printed on Indian Bank Association (IBA) Approved
- Magnetic Ink Character Recognition Code (MICR) paper
- Unique Barcode
- Unique Quick Response Code (QR)
- Fugitive Ink Background
- Invisible Ink Mark
- Void Pantograph
- Watermark
- CCTV at mine lease site
- GPS Based Vehicle Tracking System

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided outside Sand Spot area.

**Compliance of earlier Environmental Clearance**

Takarkhede Part-1 sand spot of Takarkhede village of Erandol tehsil has got environmental clearance in the year 2020-2021 but the sand ghat didn't get a response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot

**7. Proposed Infrastructure**

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided in outside Sand Spot area.

**8. R&R Plan**

R&R is not involved.

**9. Project schedule**

Period of mining for the proposed sand spot will be decided by the Office of District Collectorate.

**10. Analysis of Proposal**

Description of the project included in items 1-10 above indicates the following:

1. It is proposed for opencast manual river sand mining.
2. Opencast mining without hampering the present environmental quality of the area.
3. Income to local people is uncertain & initiation of mining will ensure regular income to local people.

**11. Costing**

Costing parameters will be decided by the District Authorities.

**12. Compliance to Environment Clearance**

Whether there are any serious violation of safety rules and regulation which may jeopardize human health and safety. If so, give details of violations and state the steps proposed to be taken with the time scheduled to rectify the violations:

No, there are not any serious violation of safety rules and regulation, which may jeopardize human health and safety. The applicant has given a commitment in this effect and undertaking also given to follow and implement, as specified in the mining plan. The applicant is undertake to abide and implement any special conditions imposed by various authorities and also to complete formalities under provision of the Mines & Mineral (Development & Regulation) Act, 1957 and the Bombay Minor Mineral rules, the Mineral Conservation and Development Rules, 1988 as amended, the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule 2013, MoEF&CC Notification S.O. 141 (E) dated 15th January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, Sustainable Sand Mining Management Guidelines 2019, Sand Mining Policy 2020

**13. Any Other Information:**

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.



**Takarkhede Part-1 sand spot over an extent of 1.4025Ha At Girna River Bed Gut No.1, 2, 3, 4, Takarkhede Part-1 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

These things will be religiously followed and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule-2013, MoEF&CC Notification S.O. 141 (E) dated 15<sup>th</sup> January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.05.1994 and 04.09.2006.

**Risk Assessment for Takarkhede Part-1 Sand Spot**

**1. Introduction**

A main principle of risk assessment is that it should take place before any changes are made. Risks should be assessed and control measures are put into action before new work is introduced or systems are changed. The process should influence budgets and allocation of resources, rather than being an afterthought when the decisions have already been made.

The risk management process is continuous, with well-defined steps that support better decision making by contributing greater insight into risks and their impacts. Risks from all sources are identified and once they pass the materiality threshold, a formal process begins in which causal factors and consequences are identified and the correlation with other risks and the current risk mitigating strategy is reviewed. One of the challenges is to ensure that mitigating strategies are geared to deliver reliable and timely risk information to support better decision-making.



The mining operations at TAKARKHEDE PART-1 SAND SPOT are subjected to the risks and hazards normally encountered in open-cast mining operations. These risks include operational risks relating to

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**Takarkhede Part-1 sand spot over an extent of 2.47Ha At Girna River Bed Gut No.1 to 5, 13, 14 & 19, Takarkhede Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

materials handling, accidents, removing material from quarry area. Mining processes also rely on key inputs, for example fuel. Appropriate insurance can provide protection from some, but not all, the costs that may arise from unforeseen events. If any of these risks should materialize, such an event could result in serious harm to employees and contractors, delays in production, increased production costs and possible increase in liabilities.

Disruption to the supply of key inputs, or changes in their pricing, may have a material and adverse impact on TAKARKHEDE PART-1 SAND SPOT asset values, costs, earnings and cash flows. Failure to meet production target results in increased unit costs. The impact is more pronounced at operations with a high level of fixed costs. Mitigation strategies include efforts to secure strategic supplies at competitive prices, energy reduction, and application of group water management guidelines, adoption of lean production principles and practices and business improvement initiatives to reduce unit costs.

There are certain aspects which should be taken care of, in a quarrying plan with accordance of risk management.

<b>Components</b>	<b>Risk Involved</b>
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
Fire	Only trucks and tractors will make use of diesel for transportation. Diesel is not so highly inflammable but accidental fires can take place.
Road Accidents	Vehicles are used for transporting the material from quarry area to the buyer's location. Due to some improper maintenance of the vehicle a road accident can occur leading to fatal results.

To minimize the risk, certain measures can be taken like implying safety rules, facilities of basic first aid near the site and having training for the workers about personal safety.

Disaster Management Plan is envisaged with a goal to prevent hazards and accidents at work places by careful design, operation, and maintenance of equipment's. All safety precautions and provisions of Metalliferous Mines Regulation-1961 will be strictly followed. Suitable control measures will be adopted to take care of hazards/disasters that may occur during mining operation.

- No mining activities during rainy days or just after heavy rain.
- Fire fighting, first aid provisions & safety appliances will be made available to the staff and their use regularly checked
- Regular maintenance of all haulage roads & mining machinery as per manufacturer's guidelines will be done

**APPENDIX VIII  
(See paragraph 6)  
FORM 1 M**

**APPLICATION FOR MINING OF MINOR MINERALS UNDER CATEGORY 'B2' FOR LESS THAN AND EQUAL TO FIVE HECTARE**

**(I) Basic Information**

(i) Name of the Mining Lease site: Utran A.H. Part-2. Sand Spot

(ii) Location / site (GPS Co-ordinates):

<b>Boundary Points Utran A.H. Part-2</b>	<b>LATITUDE</b>	<b>LONGITUDE</b>
<b>BP1</b>	20°44'22.78"N	75°22'44.50"E
<b>BP2</b>	20°44'12.07"N	75°22'38.69"E
<b>BP3</b>	20°44'13.11"N	75°22'36.53"E
<b>BP4</b>	20°44'23.81"N	75°22'42.35"E

(iii) Size of the Mining Lease (Hectare): 2.5HA

(vi) Capacity of Mining Lease (TPA): 4575 Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 27.45 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, Maharashtra

**(II) Environmental Sensitivity**

<b>S. No.</b>	<b>Areas</b>	<b>Distance in Kilometer/Details</b>
1	Distance of project site from nearest rail or road bridge over the concerned River, Rivulet, Nallah etc.	Bridge, 6.5Km, SW
2	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road Any Other Road Electric transmission line pole or tower Canal or check dam or reservoirs or lake or	Pardhade Railway Station, 0.99Km, S NH-53, 22.3Km, NW SH-184, 4.2Km, NE 1.1Km, SW 1.24Km, SW ET, 0.86Km, SW Bahula dam, 4.4Km, SE

**Utran A.H. Part-2 sand spot over an extent of 2.59Ha At Girna River Bed Gut No.9, Utran A.H. Part-2 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

Form 1M

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	ponds In-take for drinking water pump house Intake for Irrigation canal pumps	Nil Nil
3	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil
4	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Water bodies: this is the case of river sand mining in Girna River bed; RF, 8.3Km, E
5	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil
6	Inland, coastal, marine or underground waters	Girna River bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	NH-53, 22.3Km, NW SH-184, 4.2Km, NE
9	Defence installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Utran Ahir Hadd, 1.19K, NW
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Z P School Duskheda, 1.07Km, SE Indira Nagar Hospital, 1.4Km, N
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Girna River Bed ( this is the case of river sand mining) RF, 8.3Km, E
13	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil
14	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse	The mine lease area falls in Seismic Zone III (Moderate), according to the Indian Standard Seismic Zoning Map.

**Utran A.H. Part-2 sand spot over an extent of 2.59Ha At Girna River Bed Gut No.9, Utran A.H. Part-2 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

Form 1M

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	climatic conditions)	
15	Is proposed mining site located over or near fissure / fracture for ground water recharge	No
16	Whether the proposal involves approval or clearance under the following Regulations or Acts, namely:- (a) The Forest (Conservation) Act, 1980; (b) The Wildlife (Protection) Act, 1972; (c) The Coastal Regulation Zone Notification, 2011. If yes, details of the same and their status to be given.	No
17	Forest land involved (hectares)	Nil
18	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Orders or directions of the Court, if any, and its relevance with the proposed project.	Nil

***Utran A.H. Part-2 sand spot over an extent of 2.59Ha At Girna River Bed Gut No.9, Utran A.H. Part-2 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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## **ENVIRONMENTAL MANAGEMENT PLAN**

### **1 Introduction**

Ministry of Environment, Forest & Climate Change (MoEF&CC) Notification 2006 and Sustainable Sand Mining Management Guidelines 2016 and as per provision in Mines and Minerals (Development and Regulation) Act 1957 Schedule 60 section 15, Govt Of Maharashtra makes a Minor Mineral Extraction Rules 2013 to extract all the minor mineral in scientific way so that there is no adverse impact on Environment and Climate. To extract every minor mineral from any land (either Government or Private) there is provision of mining plan which is approved by competent authority; For long term leased minor mineral (5 – 10 years period) and Sand excavation from river bed, Senior Deputy Director of Directorate of Geology and Mining is a Competent authority, for short term Temporary permits which is valid for one year, Committee headed by Hon. Collector is Final authority to Approved the District Mining Plan.

As per Minor Mineral Extraction Rules 2013 Rules 70, Disposal of sand from River bed, Nallah and creeks by way of public auction, in this regards Govt resolution Gaukhni -10/0615/case No. 289/kha dated 3rd January 2018 is applicable in entire state. As per Enforcement & Monitoring Guidelines for Sand Mining 2020 Sustainable sand mining management guidelines 2016, Standard Environment condition for sand mining and sustainable mining practices, district level survey report should be prepared and area suitable for mining and area prohibited for mining be identified.

### **2 Project Description**

Utran A.H. is a small Village in Erandol Taluka in Jalgaon District of Maharashtra State, India. It comes under Utran A.H. Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 35KM towards N from District headquarters Jalgaon. The Sand Ghat is 312 KM from State capital Mumbai.

The sand spot area is connected to approach road at a distance of 511m in South direction. Paradhe Railway Station is present at a distance of 1 km.

Area covered in SOI Toposheet No- 46P/6. The GPS reading of boundary point are given below:

**Utran A.H. Part-2 sand spot over an extent of 2.59Ha At Girna River Bed Gut No.9, Utran A.H. Part-2 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

**Table 1: Salient Features of the Project**

Items	Details															
Location	Village- Utran A.H., Tehsil- Erandol District-Jalgaon, Maharashtra.															
Latitude and Longitude	<table border="1"> <thead> <tr> <th>Boundary Points Utran A.H. Part-2</th> <th>LATITUDE</th> <th>LONGITUDE</th> </tr> </thead> <tbody> <tr> <td>BP1</td> <td>20°44'22.78"N</td> <td>75°22'44.50"E</td> </tr> <tr> <td>BP2</td> <td>20°44'12.07"N</td> <td>75°22'38.69"E</td> </tr> <tr> <td>BP3</td> <td>20°44'13.11"N</td> <td>75°22'36.53"E</td> </tr> <tr> <td>BP4</td> <td>20°44'23.81"N</td> <td>75°22'42.35"E</td> </tr> </tbody> </table>	Boundary Points Utran A.H. Part-2	LATITUDE	LONGITUDE	BP1	20°44'22.78"N	75°22'44.50"E	BP2	20°44'12.07"N	75°22'38.69"E	BP3	20°44'13.11"N	75°22'36.53"E	BP4	20°44'23.81"N	75°22'42.35"E
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BP4	20°44'23.81"N	75°22'42.35"E														
Sand spot area (In Ha)	2.59															
Proposed production capacity (In Brass)	4575															
Manpower Requirement (considering 3-month period)	39 labours + 2 mate + 2 Supervisor=43 manpower															
Infrastructure Requirement (As per Govt Resolution 3rd January 2018)	<ol style="list-style-type: none"> <li>1. Room / Hut for Official records</li> <li>2. Electricity / Battery for Running CCTV on 24X 7 daily.</li> <li>3. One Computer / Android base Mobile for the online generation of Invoice number.</li> </ol>															
Water requirement & source	4 KLD – Tankers from nearby village.															
Project cost INR (Lakh)	27.45 Lakhs															



***Utran A.H. Part-2 sand spot over an extent of 2.59Ha At Girna River Bed Gut No.9, Utran A.H. Part-2 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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**3 Baseline Environmental Status**

**i. Topography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Amalner, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Amalner, Erandol, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Amalner, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 231 to 240 from MSL i.e 9m. The Highest contour value is 240 and lower is 231. The flow direction of Girna river is towards SW

**ii. Hydrology**

The will be no change in water table during mining operation, as the depth of mining shall be restricted to 0.5m water level, which is less likely to affect surface level or ground water table. There is no

***Utran A.H. Part-2 sand spot over an extent of 2.59Ha At Girna River Bed Gut No.9, Utran A.H. Part-2 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.***

***Environmental Management Plan***

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proposal of any stream modification/diversion due to this mining activity hence there will be no impact on flow of water.

**iii. Soil Environment**

The area is not having any top soil or fertile soil. The depth of mining shall be restricted to 0.5m. There is no major impact on soil of the study area due to mining activities

**iv. Land Use Land Cover**

The project area does not consist of any forest land. It does not consist of any human habitations. Any change in scope of mining as per approved mining plan can lead to bank erosion /cutting and thereby river channel shifting degradation of land, causing loss of properties and degradation of surrounding landscape.

**v. Water Environment**

There will not be any waste water discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 0.5m only so there will not be any intersection with ground water table. It is observed from the dug well in the adjacent plain area and in the nearby villages that the ground water table varies depending upon seasonal variations. The depth to water levels in the district ranges from 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 0.5m that too within the river course and the total mining operation will be achieved through manual means, there will be no effect on ground water table. All the stipulations of MoEF for sand mining and guidelines as per the Maharashtra Minor Mineral Extraction [Development and Regulation] Rules, 2013 of Section 15 of MMDR Act 1957 [67 of 1957] will be followed. Hence, impact on water regime due to the proposed sand mining is not anticipated.

1. Precautionary measures will be initiated for closing the operation and shifting the men and transport vehicles prior to onset of monsoon.
2. No oils or lubricants will be discharged in the sand to avoid water pollution.

**vi. Climate**

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

**vii. Biological Environment**

The project is only of extraction of minor minerals viz. sand from the river quarry.

Flora: The area is completely barren and devoid of any vegetation in the river. Only few thorny bushes are seen on the banks of the River.

Fauna: As there is no forest cover, no wild life can be seen in this area.

1. There will be no significant impact of the river quarry mining project on the biological diversity found in the 5km. radius of the site.

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2. The mining lease area is in non-forest land i.e. sandy river quarry where presence of fauna is not at all seen. As such, there will be no adverse impact of the manual mining activity on fauna around the mining lease area.

3. No adverse impacts will be envisaged on the existing aquatic fauna, on downstream side (away from site) as the mining confined to above water level only and at all touching/disturbing water table.

**viii. Socio-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

A. The mining operations will provide direct & indirect employment village people.

B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.

C. Local work force will be given first preference for employment.

D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area)

**4 Impact assessment report along with proposed mitigation measures.**

Preparation of Environmental Management Plan is required for formulation, implementation, and monitoring of environmental protection measures during and after commissioning of projects. The plan should indicate the details as to how various measures have been proposed to be taken including cost components as may be required.

**1. Land Environment**

The type of mining and the characteristics of the mineral deposit both affect the degree to which mining disturbs the landscape. Sand Mining and allied activities will be done in the fluvial plain formed by river meandering. Mining of sand may cause a few environmental degradations.

**a. Anticipated Impacts:**

- ❖ Damage of riverbank due to access ramps to riverbed, may cause soil erosion.
- ❖ Destruction of river bank hinterland and ecological due to extraction of sand by probability of damage to the flood control bunds (built along the river side) due to heavy movements of vehicles over the bund to approach the mine area and further during transportation for sand from the mine area.
- ❖ Improper disposal of packing material, carried by the workers like used sachet/ gutka /pan masala pouches.
- ❖ Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations, borehole users due to dust, noise and it also causes traffic hazards.
- ❖ Surface degradation due to road network.

**b. Mitigation Measures:**

**Utran A.H. Part-2 sand spot over an extent of 2.59Ha At Girna River Bed Gut No.9, Utran A.H. Part-2 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

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- ❖ Safety distance of 3 meter or 1/10th of the width of the river whichever is more will be left from both the banks of the river (as per “Sustainable sand mining guidelines”).
- ❖ No foreign material like polythene bag, jute bag and useless articles should be allowed to remain/spill in river bed and catchment area, or no pits/pockets will be allowed to be filled with such material.
- ❖ Minimum number of access roads to river bed for which cutting of river banks will be avoided and ramps are to be maintained.
- ❖ Care will be taken to ensure that ponding is not formed in the river bed.
- ❖ Mining will not exceed beyond the allowed extraction capacity.
- ❖ Green belt will be developed along the haul road and the bank of rivers of mine premises and near the sand mining site. While selecting the plant species, preference will be given for planting native species of the area.

**3. Water Environment**

**a. Anticipated Impacts:**

- ❖ As the project activity is carried out in the dry part of river bed, none of the project activities will affect the water environment or riverbank habitats. Project activities will not have any adverse effect on the physical components of the environment and therefore may not have any effect on the recharge of ground waters or affect the water quality. Monitoring of water quality will be checked yearly.

**b. Mitigation Measures:**

- ❖ Mining is avoided during the monsoon season and at the time of floods. This will help in replenishment of sand in the riverbed.
- ❖ Mining below subterranean water level will be avoided as safeguard against environmental contamination and over exploitation of resources.
- ❖ River stream will not be diverted to form in active channels.
- ❖ Utmost care will be taken to minimize or control leakage vehicles to be used for sand transportation.
- ❖ The washing of tractor trolleys in the river will be avoided.
- ❖ The contractor will follow all guidelines and rules for proper and scientific method of mining during the period of extracting the sand.

**4. Air Environment:**

**a. Anticipated Impacts:**

**Due to Haul Road/ Access Road:**

- ❖ Plying of tractor trolleys from public road to river sand collection points needs access roads.
- ❖ Majority of such access roads are the same existing roads/tracks being used by pedestrians/cart owners. Movement of heavy vehicles sometimes causes problems to cattle, agriculture land, and human habitations due to dust, noise and movement of public.
- ❖ These environmental problems are felt more as the area is rural in nature.

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**Due to Mining process:**

- ❖ Air pollution is likely to be caused at various stages of sand mining operations such as excavation, loading & transportation of material.
- ❖ Most of the dust will be generated from loading & transportation. This dust becomes air borne and gets carried away to surrounding areas.
- ❖ The impact on air is mainly localized in nature as the dust particles are not carried to longer distances and the effect is felt within the core zone of the project involving active Sand mining operations.

**b. Mitigation Measures:**

**Mitigation of Impacts on Access Roads:**

- ❖ Movement of the vehicles on the road will be increased; however, unmetalled road in the mining area will be sprinkled with water at regular intervals.
- ❖ In addition to prevent spillage by tractor trolleys over loading should be controlled along with speed limit (1Brass /tractor trolley).
- ❖ Maintenance of haul road will be done on regular basis.

**c. For Fugitive Dust Emission:**

- ❖ To avoid fugitive dust emissions at the time of excavation, regular sprinkling of water will be done on regular basis.
- ❖ Sand is transported to the sites by road through tractor trolleys. The sand carrying vehicles shall be covered by tarpaulin sheets.
- ❖ The Green Belt development will be prepared along the haul roads, which will act as a pollution sink.
- ❖ To minimize the vehicular pollution from the sand transporting vehicles, the following conditions will insist to permit the vehicles of the transporters.
- ❖ The vehicles should be (Bharat-IV stage) compliant and should have pollution control certificate (PUC) issued by appropriate authorities.
- ❖ Regular maintenance of transport vehicles and monitoring of vehicular emission levels at periodical intervals.

**5. Noise:**

**a. Anticipated Impacts:**

Noise environment in this project will be affected only by the equipment at the site and vehicular transportation. Since slight increase in noise levels can be expected.

**b. Mitigation Measures:**

- ❖ Minimum use of Horns at the village area.
- ❖ Timely maintenance of vehicles and their silencers to minimize vibration and Sound.
- ❖ Phasing out of old and worn-out tractor trolleys.
- ❖ Provision of green belts along the road networks.
- ❖ Care will be taken to produce minimum sound during sand loading.
- ❖ Use of Backhoe and ear plugs may be provided to protect the labors working at the site.

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**6. Socio-Economic Environment**

This project operation will provide livelihood to the poorest section of the society.

**Anticipated Impacts and Evaluation:**

- ❖ The project activities shall not have any adverse impacts on any of the common property resources of the village communities, as the sand mine lease area is not being used for any purpose by any section of the society in this region.
- ❖ There is no R & R involvement in this project.
- ❖ There is no land acquisition in this project.
- ❖ The results of the field survey conducted to understand the knowledge and perception of the people living around the project area gives a clear idea about the need for the project.
- ❖ A major portion of the houses in the study area are semi- pucca type structures.
- ❖ The water source to these areas is from the municipal connection and private bore wells and wells. The awareness level regarding the proposed mining activity is very high. The proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes.

**a. Social and Demographic Profile:**

The workers are from local villages. These people have been provided all welfare from a lessee like medical benefits, insurance, fees for children's education etc. They have some land and cattle for their daily earnings. Additional income earned from the Sand Mining work will improve their living standard. The group of quarries in and around will help to have infrastructure facilities like roads, schools, shops etc. This will improve their social life.

**b. Occupational Health and Safety:**

This is Riverbed Sand Mine. So, the mining activities are comparatively less because the production is not on large scale. Workers do not come across any extreme condition like excessive heat, moisture etc. Workers working around it may come across this dusty environment, which can be managed by providing face mask.

**c. Human Settlement:**

There are no houses in and around lease area. All the due precautions will be taken during mining. Transport of finished products is through the villages. There will be psychological impact of the traffic on the local people. However, the intensity of traffic is less.

**d. Health and Hygiene:**

In general, the health of villagers is moderately good. In the rainy season, the atmospheric condition is unhygienic due to lack of proper drainage and sanitation in the village habitation. Villagers are working in agricultural fields and work as laborers.

**e. Education:**

**Utran A.H. Part-2 sand spot over an extent of 2.59Ha At Girna River Bed Gut No.9, Utran A.H. Part-2 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

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- a. Mostly education is up to middle standard. Economic condition is in general moderate. So, after this project the standard of education will be increase.

**f. Socio Economic Benefits Arising Out of Mining:**

- a. Generation of employment in the rural area.
- b. Improvement in the living standards of the rural people.
- c. Creating of infrastructural facilities like roads, electricity, shops, school etc.
- d. Helping to improve literacy in the area Exploiting natural mineral so generation of revenue.
- e. Helping to sustain construction activity.
- f. Improving the greenery of the area, this is otherwise poor.

**g. Liquid Effluent:**

Not applicable because small mine and impacts are negligible.

**h. Solid Waste:**

Not applicable because small mine and impacts are negligible.

**6. Biological Environment**

**Anticipated Impacts:**

- ❖ **Aquatic environment-** Proposed mining of the dry bed of the river, so no possibility of disturbance of aquatic life.
- ❖ **Flora and Fauna-** The mining activity will have insignificant effect on the existing flora and fauna. The project area is surrounded with agricultural land. It was found that the sand mining activity will not have any significant impact on the biological environment of the region.

**Mitigation Measures:**

- ❖ Improvement in riverbank stability.
- ❖ Large woody debris in the riparian zone will be left undisturbed or replaced when moved and not be burnt.
- ❖ Vegetative debris will not be stored within the mine lease area.
- ❖ Operation and storage of heavy vehicles within riparian habitat will be restricted.
- ❖ Covering of loaded vehicles to reduce dust emission, which may harm surrounding agricultural crops and other plant species conservation of biological diversity of plants, birds, and animals.
- ❖ Greenbelt Development and Bio-Diversity Preservation Plantation activities will be carried out at the bank of the river and along the haul roads. This activity will help for maintaining ecology and environment of the area.

**5 Project Benefits**

The proposed expansion project will lead to the following benefits:

- Sand is available for Building and Construction work and by regular removal of sand there is no possibility of flood.
- This project will contribute additional revenue to the state Exchequer in the form of revenue.

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- The project will result in the employment opportunities to the unskilled/skilled local people. Thereby, the quality of life of the employed people will increase.

**6 Sand Ghat Closure Plan**

S. No	Head	Area put on. use at start of plan [in Ha]	Additional Requirement during Plan period [in Ha]	Total [in Ha]	Area considered as	Net consider for calculation
1	Area under mining / pit	-	2.59	2.59	2.59	2.59
2	Area under dump	NIL	---	---	---	---
3	Infrastructure Workshop Administrative Building etc.	--	--	--	--	--
4	Roads	--	--	--	--	--
5	Mineral reject	--	--	--	--	--
6	Green Belt Plantation /Soil dump	--	--	--	--	--
7	Tailing Dam /pond	--	--	--	--	--
8	Effluent Treatment Plant	--	--	--	--	--
9	Mineral storage	--	--	--	--	--
10	Township area	--	--	--	--	--
11	Other to specify	--	--	--	--	--
<b>GRAND TOTAL</b>			2.59	2.59	2.59	2.59

- ❖ Mining will be avoided during monsoon and floods; this will allow the sand deposit to replenish.
- ❖ Gabion structure will be constructed for the sand to replenish during monsoon season.

**7 Planning brief:**

The proposed project is opencast manual sand mining activity.

Supply demand ratio:

Information required on demand and supply of district (2023-24)			
S.No.	Name of District	Total sand Demand of District in Brass	Total Sand Available in district in Brass



**Utran A.H. Part-2 sand spot over an extent of 2.59Ha At Girna River Bed Gut No.9, Utran A.H. Part-2 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

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1	Jalgaon	191380	104531
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**8 Compliance of earlier Environmental Clearance**

- ❖ Utran A.H. has got earlier Environment clearance in the year 2016-2017. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

**9 Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020.**

- ❖ District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- ❖ Appropriate feedback and its redressal mechanism shall also be made operational.
- ❖ Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- ❖ Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- ❖ The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- ❖ Printed on Indian Bank Association (IBA) Approved
- ❖ Magnetic Ink Character Recognition Code (MICR) paper
- ❖ Unique Barcode
- ❖ Unique Quick Response Code (QR)
- ❖ Fugitive Ink Background
- ❖ Invisible Ink Mark
- ❖ Void Pantograph
- ❖ Watermark
- ❖ GPS BASED VEHICLE TRACKING SYSTEM
- ❖ CCTV Camera

**Cluster certificate with reference to the EIA Notification 2006 amended from time to time with specific remarks on the cluster formation in the periphery of the proposed sand ghat along with area map showing distances between adjoining sand mine areas.**

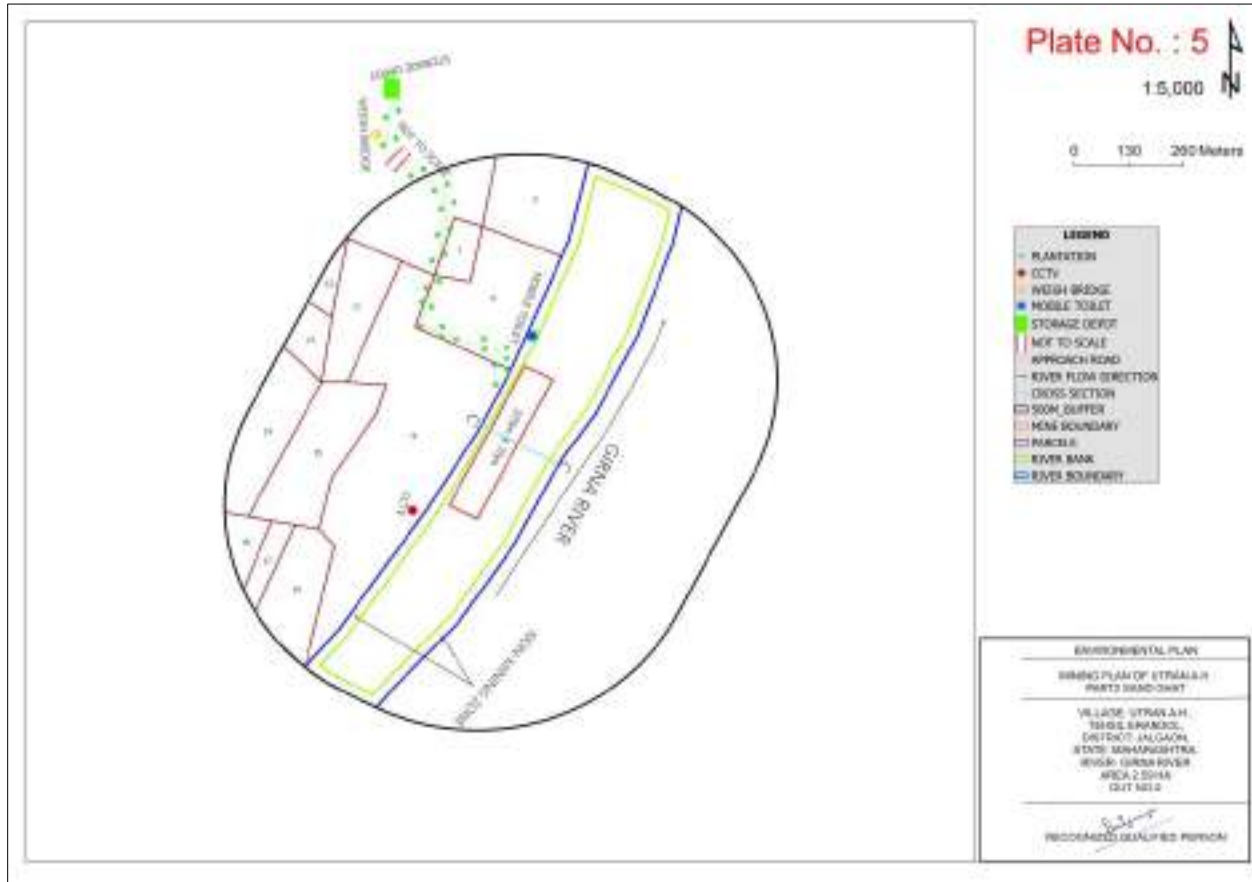
Utran A.H. does not form a cluster.

**Utran A.H. Part-2 sand spot over an extent of 2.59Ha At Girna River Bed Gut No.9, Utran A.H. Part-2 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

**10 Layout of proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc.**

Proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc. layout is given below:



**11. Proposed approach road for transport of mined sand from sand ghat to the storage area and consent of storage area from the concerned landowners is an after-auction activity to use their land as approach road.**

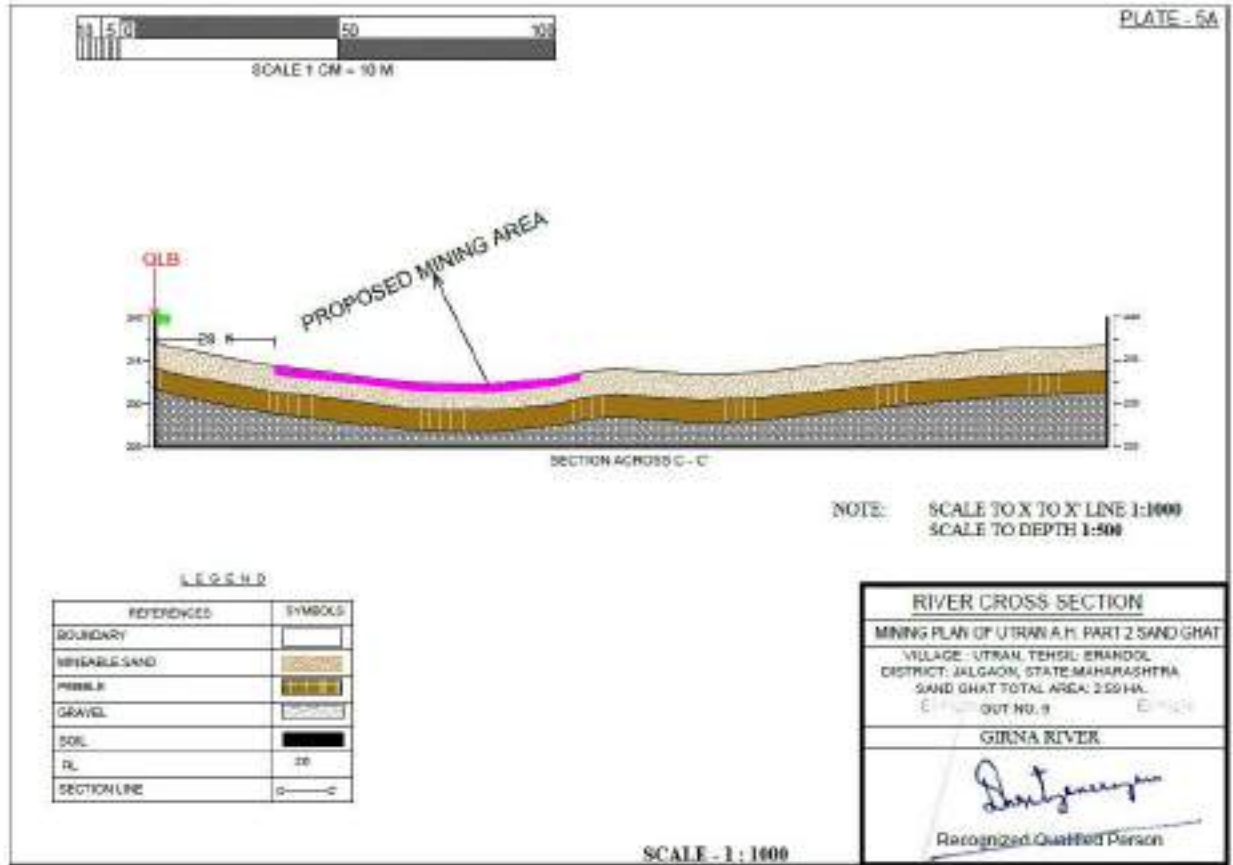
The proposed approach road length is at 511m and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the river bank. Consent of road submitted by Erandol Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from land owner.

**12. Cross -Section of riverbed showing distance of proposed sand mine area from the riverbank and other details as prescribed in the Enforcement & Monitoring Guidelines for sand mining published in January 2020 by MoEF&CC.**

Cross section of riverbed is shown below:

**Utran A.H. Part-2 sand spot over an extent of 2.59Ha At Girna River Bed Gut No.9, Utran A.H. Part-2 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Environmental Management Plan**



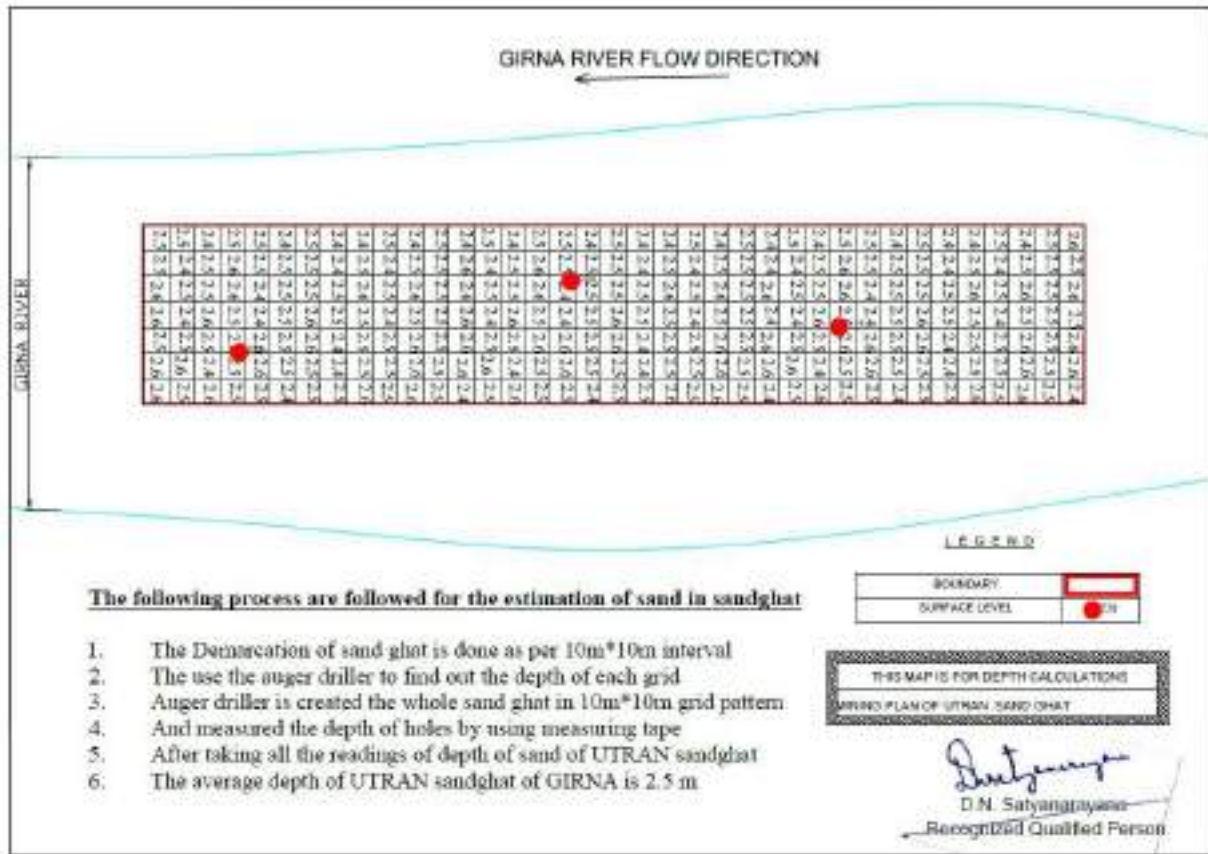
**13. Details of District Level Task Force committee meetings and status of compliance of its recommendations if any.**

District Level Task Force Committee Meeting details is enclosed.

**14. Methodology for Sand Mining:**

**Utran A.H. Part-2 sand spot over an extent of 2.59Ha At Girna River Bed Gut No.9, Utran A.H. Part-2 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Environmental Management Plan**



15. Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.

**DANDY-BOLTON EQUATION**

1. For Runoff Less Than 2 Inches

$$S = 1280 * (Q)^{0.46} * (16 - 0.26 \log(A)) * F$$

2. For Runoff More Than 2 Inches

$$S = 1958 * (Q)^{0.5} * (e^{-0.055 * Q}) * (13 - 0.26 \log(A))$$

Where

S= sediment yield of stream (t/yr./km2),

Q= average annual runoff (m3),

A= net drainage area in sq. Mile

The sediment yield of Girna river at Girana dam station is 4.612\*1020 tonnes/year/km2 by Dandy-Bolton Equation.

(Source: State Irrigation Department)

**Utran A.H. Part-2 sand spot over an extent of 2.59Ha At Girna River Bed Gut No.9, Utran A.H. Part-2 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

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**Conclusion:**

As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**16 PP to submit details of proposed plantation plan along with its location and requisite permission to be obtained from the Competent Authority.**

Plantation details are presented below:

<b>Location of greenbelt</b>	Both sides of approach road, On the riverbanks of both sides of the sand spot & nearby open areas. Haul Road outside riverbed.
<b>No. of plants to be planted</b>	698
<b>Spacing of plants</b>	4 m grid interval
<b>Species selected</b>	Native species

Tree species recommended for Plantation:

<b>Botanical name</b>	<b>Local name</b>	<b>Importance</b>
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

**17 BUDGET FOR CORPORATE ENVIRONMENT RESPONSIBILITY (CER)**

About 2% fund of the project cost is allocated for Corporate Environment Responsibility (CER) activities as presented in below Table:

**Utran A.H. Part-2 sand spot over an extent of 2.59Ha At Girna River Bed Gut No.9, Utran A.H. Part-2 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

SNo.	Budget Allocated	Budget (In INR)
1	Installation of one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	25000
3	Needed Repairing work with consultation of Grampanchayat	25000
4	Community Infrastructure Development(Steel fencing to ZP school with consultation of Grampanchayat)	120000
Total		2,50,000

**18 Environmental Management Plan (EMP)**

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR 209250 and recurring cost provision of about INR **283990** has been kept in the project cost towards the environmental protection, control and mitigation measures and implementation of the EMP, this cost is born by bidder / lease holder. The budgetary cost estimate for the EMP is given in Table.

**Table 6: Environmental Budget**

Utran A.H.			EMP Budget		
SNo.	Component	Description	Capital cost Rs.	Recurring Cost Rs.	Total Cost in Rs
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	25550	25550
3	Approach Road Maintenance		-	20440	20440
4	Green Belt Plantation	Along the River Bank	46250	-	46250
		Along the Approach Road	128000	-	128000
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	5000	-	5000
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	45000	45000
7	Security	Display Boards and other security measures	10000	-	10000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health	-	43000	43000

**Utran A.H. Part-2 sand spot over an extent of 2.59Ha At Girna River Bed Gut No.9, Utran A.H. Part-2 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

**Environmental Management Plan**

		check-up (1000Rs./ Employee)			
9	Tarpaulin Cover (5000 INR per one Cover)		20000	-	20000
<b>Total</b>			<b>209250</b>	<b>283990</b>	<b>493240</b>

**19 Public Consultation Report**

Erandol					
S.No	Villager Name/Village, Taluka	Type of Person (Villager/ Government Official)	Query raised by the Villager/Official	Response from the Proponent	Action Plan

**20 Summary and Conclusion**

The environmental status of the project site and study area of 10 km radius is delineated with respect to air, noise, water, land, biological and socio-economic environment the different project activities in the construction and operation phases are identified. To identify the impacts, the interaction between the project activities and different components of the environment are classified phase wise. A summary of the identified impacts is given in the following paragraphs.

During the operational phase, transportation of sand could cause a temporary disturbance to local environment which will be prevented with the proposed mitigation measures proposed in Point no. 4.

Proposed project will not have any major significant negative impacts. The minor impacts arising out during Excavation and Transportation phases can be mitigated with the help of the proposed Environmental Management Plan.

In general, Sand excavation from Utran A.H. Part-2 Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

### **PRE-FEASIBILITY REPORT**

The Utran A.H. Part-2. Sand Spot is situated at Village Utran A.H. , Taluka Erandol, District- Jalgaon. Sand Spot is 2.59HA of area in Gut No 9 of Utran A.H. Part-2. village of Erandol Tehsil, Jalgaon district. Detail of the project is summarised below

- District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- District Collector Jalgaon appointed M/s Integrated Precision Systems & Services Pvt. Ltd., for preparation of Mining Plan and grant of environmental clearance.
- Applicant proposed to auction the said Sand Spot over an area of 2.59HA area and identified for preparation of mining plan and for grant of Environmental Clearance.
- Mining Plans are prepared by Recognized Qualified Person and approved by Directorate of Geology & Mining Govt. of Maharashtra.
- About 4575 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Girna river bank.

#### **1. Physiography**

- ❖ The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhibit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east - west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.
- ❖ South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.
- ❖ The slope of Sand Spot area is towards SW side ranging from Contour 231 to 240 from MSL i.e 9m. The Highest contour value is 240 and lower is 231. The flow direction of GIRNA river is towards SW

#### **2. Local Geology**

The local geology is Sand of various size up to depth of 2.5- 3meter.

#### **3. Details of Exploration**



There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the river bed.

Mining - The mining will be continued with present method of open cast mining by cutting slice of 0.5m of Sand along topo-relief, by advancing from SW to NE direction as per allotted area by auction. The production can be at the rate of 12950 Cu.m or 4575 brass i.e. 1 year from the date of mining plan approval, the size of pit at the end will be 2.59HA.

### **Introduction of the project/ background information**

The Utran A.H. Part-2. Sand Spot has been kept for Auction which is situated at Village Utran A.H. Part-2. , Taluka Erandol , and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

#### **i) Brief description of project**

The Sand Spot has sufficient Reserve of Sand to work at 12950 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m area of Sand by advancing from North to South direction as per allotted Sand Spot area and handling of material with the help of labourer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

#### **ii) Need for the project**

The Sand or Sand Spot under reference is aimed at exploring Sand as ROM in various sizes i.e. fine to Coarse grain which is Transported to consumer site in outside Sand Spot area, for the infrastructure development i.e. Construction activity to produce Concrete for putting in the floor, roof- slabs, Column, Pillars, Bridges & Dam construction.

### **3. Project Description**

This mining project is an independent project and not an interlinked project.

#### **i) Location**

Utran A.H. is a small Village in Erandol Taluka in Jalgaon District of Maharashtra State, India. It comes under Utran A.H.Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 35KM towards N from District headquarters Jalgaon. The Sand Ghat is 312 KM from State capital Mumbai.

Area covered in SOI Toposheet No- 46P/6.

The boundary pillars of Sand Spot area are given below with GPS values.

**Utran A.H. Part-2 sand spot over an extent of 2.59Ha At Girna River Bed Gut No.9, Utran A.H. Part-2 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

<b>Boundary Points Utran A.H. Part-2</b>	<b>LATITUDE</b>	<b>LONGITUDE</b>
<b>BP1</b>	20°44'22.78"N	75°22'44.50"E
<b>BP2</b>	20°44'12.07"N	75°22'38.69"E
<b>BP3</b>	20°44'13.11"N	75°22'36.53"E
<b>BP4</b>	20°44'23.81"N	75°22'42.35"E

**ii) Alternate Sites**

No alternate site is proposed.

**iii) Magnitude of Operation**

Proposed period for mining of sand will be decided by the office of district collectorate 12950 cu.m. will be excavated during the period.

**iv) Project description-mining details**

The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 370m L X 70m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable. The Sand Spot has sufficient Reserve of Sand to work at 12950 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m slice of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

**v) Raw material, marketing & transport of ore**

The proposed sand spot will be auctioned, and successful bidder will be responsible for carrying out mining operations as per environmental terms and conditions, approved mining method as per approved mining plan and other terms and conditions. The loading of Sand generated to the tractor/tipper/dumpers will be done by loaders & material transported to the Dealer site.

**vi) Resource optimization, recycle, reuse**

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

**vii) Water & energy requirement**

The major water requirement in the lease area is for dust suppression and for drinking use. The total water requirement is estimated as 4 KLD the required water for dust suppression can be arranged

through tankers from nearby village and drinking water will be provided in earthen pots for labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

**viii) Quantity of waste & scheme for management**

There will not be any waste generation within the lease area.

**ix) Schematic Representations**

It is a proposal of opencast manual sand mining from river bed. Mining plan is approved by the competent authority.

**4. Site Analysis**

**i) Connectivity**

Utran A.H. is a small Village in Erandol Taluka in Jalgaon District of Maharashtra State, India. The sand spot area is connected to approach road at a distance of 511 m in South direction. Paradhe Railway Station is present at a distance of 1km.

**ii) Land Use, form & Ownership**

The ultimate land use pattern for the lease area of 2.59HA. will be consisting of

- |                                    |   |          |
|------------------------------------|---|----------|
| 1. Mining Area                     | : | 2.59HA.  |
| 2. Construction of Temporary Roads | : | 0.00 ha. |
| 3. Total                           | : | 2.59HA.  |

At present ownership of this sand spot area is in the hand of Govt. of Maharashtra, after approval of mining plan and EC quarry area will be transfer to bidder after auction.

**iii) Geology**

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

**Existing land use pattern**

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

**Social-Economic Environment**

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- A. The mining operations will provide direct & indirect employment village people.
- B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
- C. Local work force will be given first preference for employment.

- D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area).

**Planning brief:**

The proposed project is opencast manual sand mining activity.

Supply demand ratio:

<b>Information required on demand and supply of district (2023-24)</b>			
<b>S.No.</b>	<b>Name of District</b>	<b>Total sand Demand of District in Brass</b>	<b>Total Sand Available of district in Brass</b>
1	Jalgaon	191380	104531

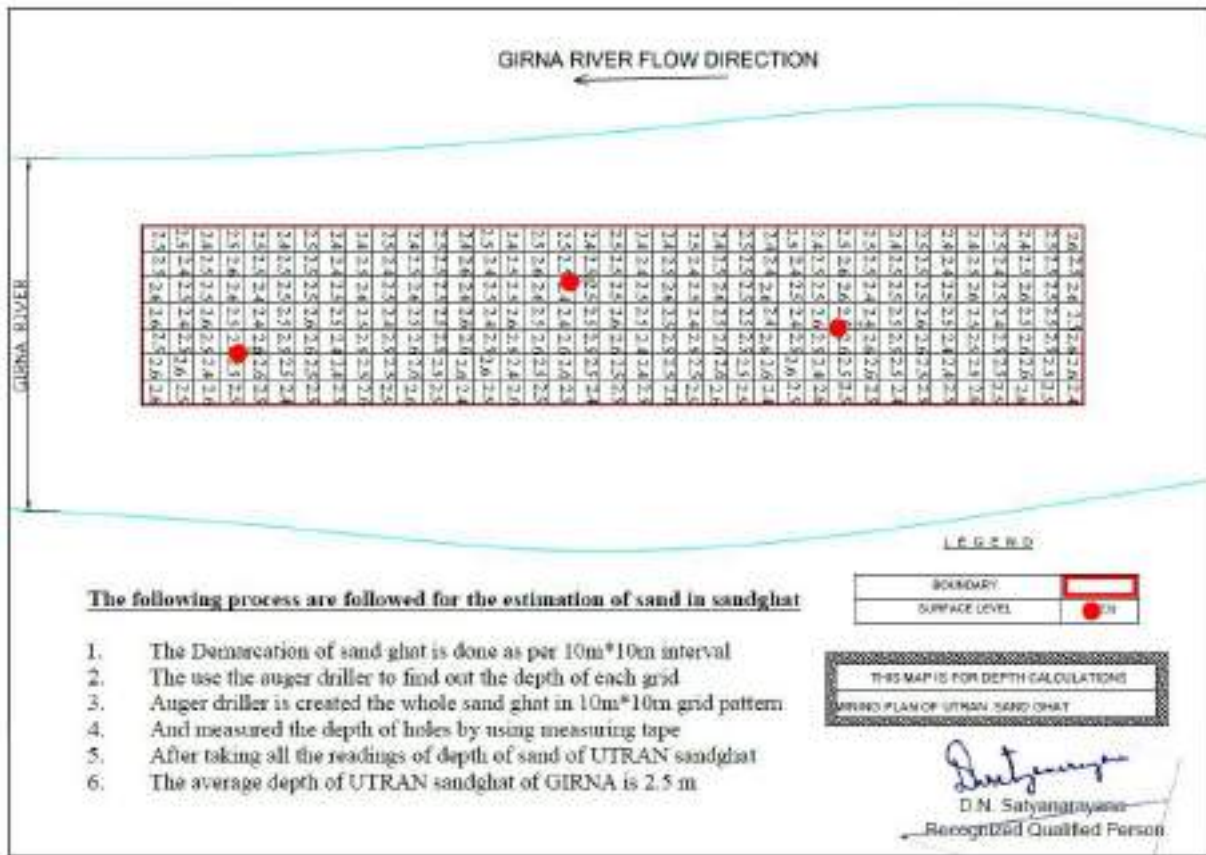
**Replenishment:**

- Area of deposition and erosion was calculated for each cross-section after giving due regard to stability & safety of active channel banks & other features of importance.
- DGPS and other survey tools have been used to define topography, contours and offsets of lease area.
- Contour & elevation benchmarks are provided with the baseline data for assessing pre and post-study period scenario.
- Physical benchmarks are fixed at intervals (1 in 30 m) & Reduced Levels (RL) are validated from a nearby standard RL.
- These RL are engraved on a steel plate (Bench Plate) & are fixed & placed at locations which are free from any damages & are available in pre and post-study period.
- Bench plates are available for use during the mining period as reference for all mining activity.
- Baseline data on elevation status for a grid of 10 m x 10 m is taken to ensure the accuracy in the assessment.
- It was made sure that two consecutive cross-sections in longitudinal and lateral direction is not be more than 10-meter distance apart.
- Changes have been observed in the elevation in pre and post scenario at each node and were depicted in graphical forms with an appropriate scale for estimating the area of deposition & erosion.
- Elevation level was placed in reference to the nearest bench-plates established for the purpose.
- The levels (MSL & RL) of corner point of each grid were identified and safety barriers (Non-Mining) are demarcated as restricted in consensus with Mineral Concession Rules of respective State, and the provision mentioned in this Sustainable Sand Mining Management Guidelines.
- A clear identification was highlighted between grids under mineable and grids under the non-mineable area. These baseline data (pre and post) was subjected to stimulation

with the help of data mine software to derive at the replenishment area and corresponding volume and estimated weight.

- The database was structured in a tabulated form clearly depicting the nomenclature of the section lines, latitude and longitude of the starting point, chain-age and respective levels of all the points taken on that section line.
- Net area was derived after summation of area of deposition minus area of erosion for each cross-section.
- Volume was estimated by multiplying distance between two cross-sections with average of net area of these two consecutive cross-sections.
- One sample per 900 square meters (30 m x 30 m) was preferred for sample density for assessment of bulk density for estimation of deposition rate.
- Care was taken that the sample for assessment of bulk density is taken from the deposition zone & not from erosion.

**Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.**



**DANDY-BOLTON EQUATION**

1. For Runoff Less Than 2 Inches

$$S = 1280 * (Q)^{0.46} * (1.46 - 0.26 \log(A)) * F$$

**2. For Runoff More Than 2 Inches**

$$S = 1958 * (Q)^{(e - 0.055 * Q)} * (1.43 - 0.26 \log(A))$$

Where

S= sediment yield of stream (t/yr./km<sup>2</sup>),

Q= average annual runoff (m<sup>3</sup>),

A= net drainage area in sq. mile

- The sediment yield of Girna river at Girana dam station is 4.612\*10<sup>20</sup> tonnes/year/km<sup>2</sup> by Dandy-Bolton Equation..

**(Source: State Irrigation Department)**

**Conclusion:**

As per above data sedimentation yield for Girna River. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

**Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020**

- District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- Appropriate feedback and its redressal mechanism shall also be made operational.
- Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- Printed on Indian Bank Association (IBA) Approved
- Magnetic Ink Character Recognition Code (MICR) paper
- Unique Barcode
- Unique Quick Response Code (QR)
- Fugitive Ink Background

- Invisible Ink Mark
- Void Pantograph
- Watermark
- CCTV at mine lease site
- GPS Based Vehicle Tracking System

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided outside Sand Spot area.

#### **Compliance of earlier Environmental Clearance**

Utran A.H. Part-2 sand spot of Utran A.H. Part-2 village of Erandol tehsil has got environmental clearance in the year 2020-2021 but the sand spot did not get a response in E-Tender and E-Auction Process, Hence the Environmental Compliance was not done for the sand spot

#### **7. Proposed Infrastructure**

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided in outside Sand Spot area.

#### **8. R&R Plan**

R&R is not involved.

#### **9. Project schedule**

Period of mining for the proposed sand spot will be decided by the Office of District Collectorate.

#### **10. Analysis of Proposal**

Description of the project included in items 1-10 above indicates the following:

1. It is proposed for opencast manual river sand mining.
2. Opencast mining without hampering the present environmental quality of the area.
3. Income to local people is uncertain & initiation of mining will ensure regular income to local people.

#### **11. Costing**

Costing parameters will be decided by the District Authorities.

#### **12. Compliance to Environment Clearance**

Whether there are any serious violation of safety rules and regulation which may jeopardize human health and safety. If so, give details of violations and state the steps proposed to be taken with the time scheduled to rectify the violations:

No, there are not any serious violation of safety rules and regulation, which may jeopardize human health and safety. The applicant has given a commitment in this effect and undertaking also given to follow and implement, as specified in the mining plan. The applicant is undertake to abide and implement any special conditions imposed by various authorities and also to complete formalities under provision of the Mines & Mineral (Development & Regulation) Act, 1957 and the Bombay Minor Mineral rules, the Mineral

***Utran A.H. Part-2 sand spot over an extent of 2.59Ha At Girna River Bed Gut No.9, Utran A.H. Part-2 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.***

Conservation and Development Rules, 1988 as amended, the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule 2013, MoEF&CC Notification S.O. 141 (E) dated 15th January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, Sustainable Sand Mining Management Guidelines 2019, Sand Mining Policy 2020

**13. Any Other Information:**

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule-2013, MoEF&CC Notification S.O. 141 (E) dated 15<sup>th</sup> January 2016, and MoEF&CC Sustainable Sand Mining Management Guidelines 2016, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.05.1994 and 04.09.2006.



**Risk Assessment for Utran A.H. Part-2. Sand Spot**

**1. Introduction**

A main principle of risk assessment is that it should take place before any changes are made. Risks should be assessed and control measures are put into action before new work is introduced or systems are changed. The process should influence budgets and allocation of resources, rather than being an afterthought when the decisions have already been made.

The risk management process is continuous, with well-defined steps that support better decision making by contributing greater insight into risks and their impacts. Risks from all sources are identified and once they pass the materiality threshold, a formal process begins in which causal factors and consequences are identified and the correlation with other risks and the current risk mitigating strategy is reviewed. One of the challenges is to ensure that mitigating strategies are geared to deliver reliable and timely risk information to support better decision-making.



The mining operations at UTRAN A.H. PART-2. SAND SPOT are subjected to the risks and hazards normally encountered in open-cast mining operations. These risks include operational risks relating to

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**Utran A.H. Part-2 sand spot over an extent of 2.59Ha At Girna River Bed Gut No.9, Utran A.H. Part-2 Village, Tehsil- Erandol, Jalgaon District, Maharashtra.**

materials handling, accidents, removing material from quarry area. Mining processes also rely on key inputs, for example fuel. Appropriate insurance can provide protection from some, but not all, the costs that may arise from unforeseen events. If any of these risks should materialize, such an event could result in serious harm to employees and contractors, delays in production, increased production costs and possible increase in liabilities.

Disruption to the supply of key inputs, or changes in their pricing, may have a material and adverse impact on UTRAN A.H. PART-2. SAND SPOT asset values, costs, earnings and cash flows. Failure to meet production target results in increased unit costs. The impact is more pronounced at operations with a high level of fixed costs. Mitigation strategies include efforts to secure strategic supplies at competitive prices, energy reduction, and application of group water management guidelines, adoption of lean production principles and practices and business improvement initiatives to reduce unit costs.

There are certain aspects which should be taken care of, in a quarrying plan with accordance of risk management.

<b>Components</b>	<b>Risk Involved</b>
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
Fire	Only trucks and tractors will make use of diesel for transportation. Diesel is not so highly inflammable but accidental fires can take place.
Road Accidents	Vehicles are used for transporting the material from quarry area to the buyer's location. Due to some improper maintenance of the vehicle a road accident can occur leading to fatal results.

To minimize the risk, certain measures can be taken like implying safety rules, facilities of basic first aid near the site and having training for the workers about personal safety.

Disaster Management Plan is envisaged with a goal to prevent hazards and accidents at work places by careful design, operation, and maintenance of equipment's. All safety precautions and provisions of Metalliferous Mines Regulation-1961 will be strictly followed. Suitable control measures will be adopted to take care of hazards/disasters that may occur during mining operation.

- No mining activities during rainy days or just after heavy rain.
- Fire fighting, first aid provisions & safety appliances will be made available to the staff and their use regularly checked
- Regular maintenance of all haulage roads & mining machinery as per manufacturer's guidelines will be done