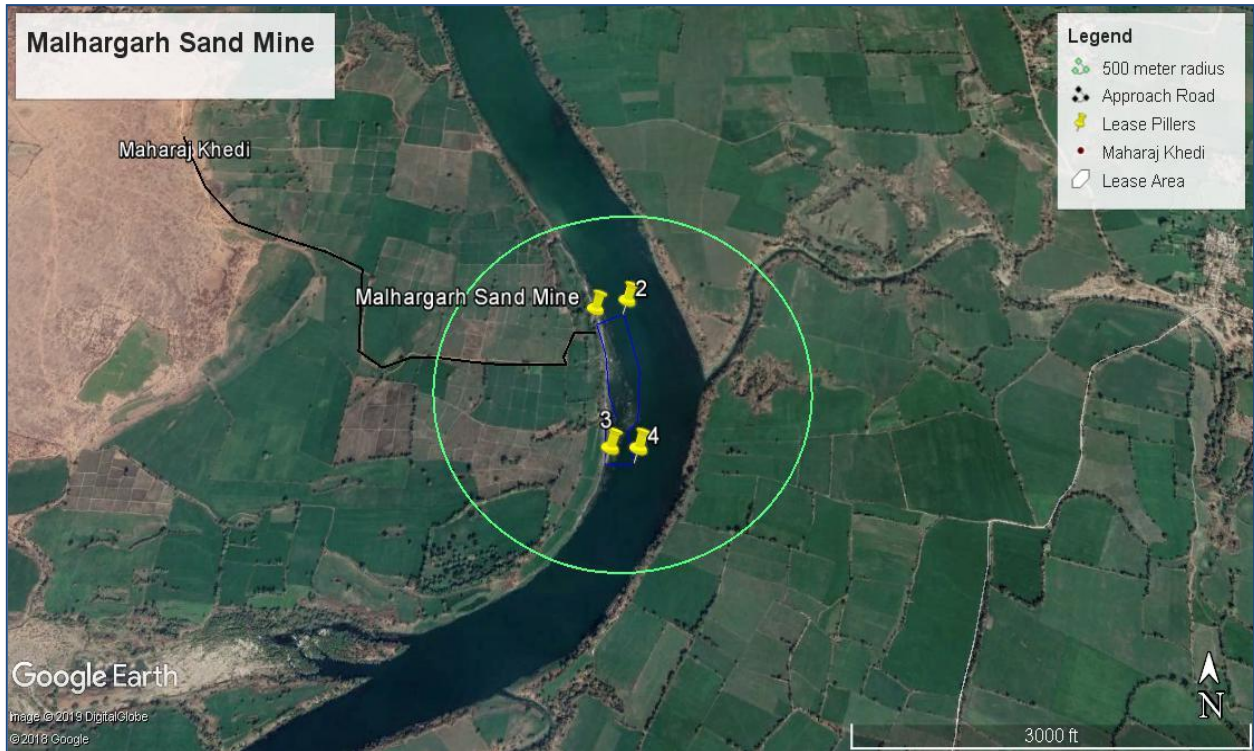


ENVIRONMENT MANAGEMENT PLAN (EMP)

For
MALHARGARH SAND QUARRY
(QUARRY LEASE AREA 3.20 Ha)
Located at
Khasra No- 826/1
Village- Malhargarh, Tehsil- Mungaoli,
District- Ashok Nagar, State-Madhya Pradesh



PROPONENT
Sarpanch, Gram Panchayat Malhargarh
Tehsil- Mungaoli, District- Ashok nagar(MP)

Milind Kundal

PREPARED BY
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INTRODUCTION

IDENTIFICATION OF PROJECT AND PROJECT APPLICANTS:-

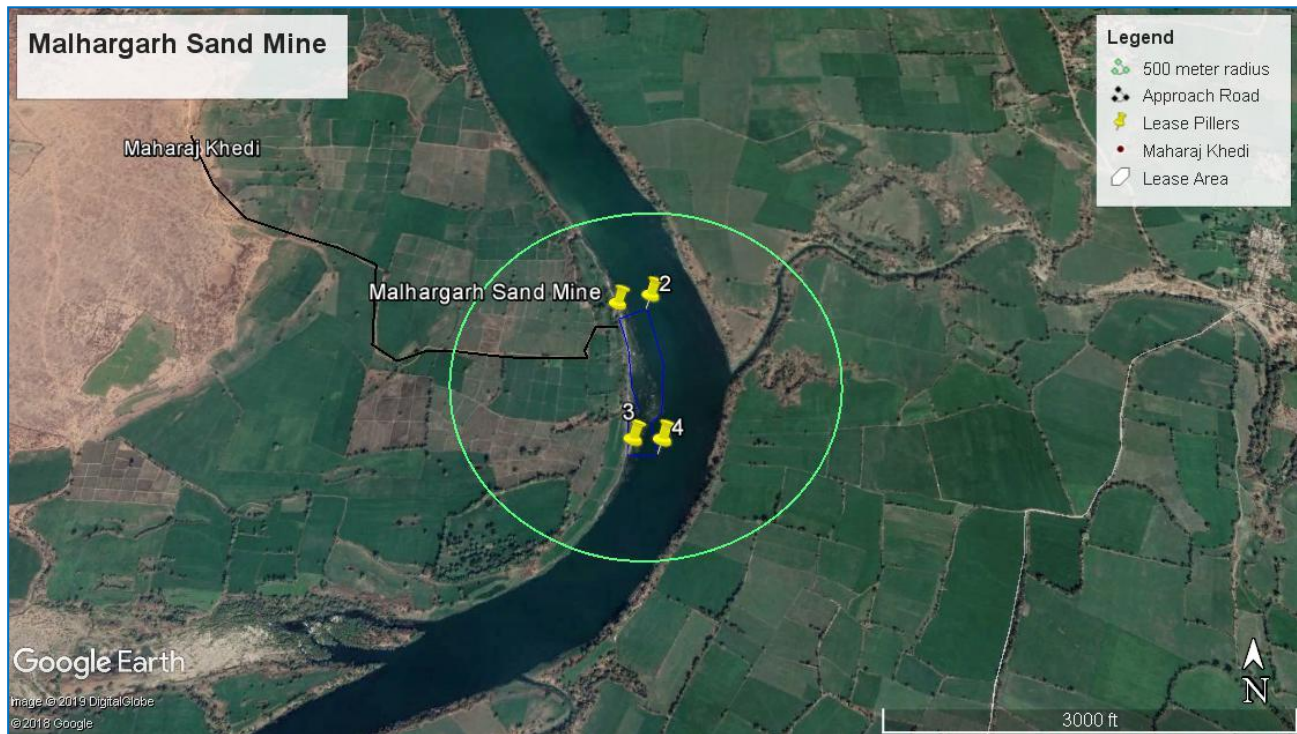
The Proposed Sand Quarry is situated at Khasra No. 826/1 in Village – Malhargarh, Tehsil-Mungaoli, District – Ashok nagar(MP). This site is 50.00 km away from District- Ashok nagar (MP). Area is marked by authorized agency for excavation of sand and there is a proved reserve of mineable sand. . The lease has been granted by letter no 342/ret niti/2018 dated 25/06/2018 in the name of Sarpanch, Gram Panchayat, Malhargarh Tehsil- Mungaoli, District- Ashok nagar (MP) for a period of 5 years over an area of 3.20 Ha located at Village - Malhargarh, Tehsil- Mungaoli, District – Ashok nagar, Madhya Pradesh State. The total applied area is 3.20 hectare. The proposed production of Sand- 42120 CUM/Annum, Mining will be done in a manual way, i.e. partially by machinery and partially by manual methods. Hence some impacts on air, water, soil, noise and land are envisaged. To prevent these impacts during sand mining operations following mitigation measures are adopted. The environment management plan has to be developed with a view to bring down the level of impacts during proposed mining activities. In each of the areas of impact, measures have to be taken to reduce potentially significant adverse impacts and where these impacts are beneficial such impacts are to be enhanced/ augmented so that overall adverse impacts are reduced to low level possible.

PROJECT DESCRIPTION:-

- I. **TYPES OF PROJECT:** - Mining (Sand)
- II. **LOCATION OF THE PROJECT**

S.NO.	Particular	Details															
1	Name of Applicant	Sarpanch, Gram Panchayat Malhargarh															
2	Address	Tehsil- Mungaoli, District- Ashok nagar (MP)															
3	District	Ashok nagar															
4	Tehsil	Mungaoli															
5	Village	Malhargarh															
6	Khasra No	826/1															
7	Area	3.20 Hect.															
8	Location	<p>The geographical location of the mine with respect to the boundary pillar of lease area are given below :-</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>BP. No.</th> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>24°15'54.81"N</td> <td>78° 5'48.97"E</td> </tr> <tr> <td>B</td> <td>24°15'55.73"N</td> <td>78° 5'52.05"E</td> </tr> <tr> <td>C</td> <td>24°15'42.18"N</td> <td>78° 5'50.53"E</td> </tr> <tr> <td>D</td> <td>24°15'42.18"N</td> <td>78° 5'53.12"E</td> </tr> </tbody> </table>	BP. No.	Latitude	Longitude	A	24°15'54.81"N	78° 5'48.97"E	B	24°15'55.73"N	78° 5'52.05"E	C	24°15'42.18"N	78° 5'50.53"E	D	24°15'42.18"N	78° 5'53.12"E
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Figure 1: Google image of Proposed Quarry



LAND ENVIRONMENT MANAGEMENT

Land degradation and ecological disturbances occurs in opencast mining. In preparation of this plan for sand mine, emphasis on environmental protection has been given to reduce the adverse impact on the present environmental scenario.

Impacts envisaged during mining operations:

1. Land degradation
2. Disturbance in the ecology of the area.
3. Excess creation of waste dumps.

Mitigation measures should be adopted:

1. Mining operations will be carried out at day time only.
2. Mining will be done in systematic and scientific way to prevent the disturbance in ecology of the area.
3. Mining will be done in steps and geological formation is having slopes.

AIR QUALITY MANAGEMENT

The proposed mining operations are not anticipated to increase the concentration of the pollutants beyond the prescribed limits. Air pollution is the very major and common during drilling and blasting operations. However, higher levels of SPM are envisaged on air environment.

Impacts envisaged during mining operations:

1. Higher dust levels.
2. Higher NO_x levels.
3. Higher CO levels.

Mitigation measures should be adopted:

1. Water sprinkling on haul road and approach road.
2. Plantation around the mining lease area will be provided to arrest dust emissions.
3. Monitoring of Air quality will be done on regular basis.
4. Tractors/Trolleys will be covered by tarpaulin sheets during transportation.
5. Regular maintenance of vehicles.
6. All the vehicles that will be used for transportation i.e. trucks, tippers, and dumpers will be maintained regularly and checked for Pollution under Control.
7. Personal Protective Equipment like dust mask will be provided to all employees working in the likely dusty areas.
8. Covered transport of the stone from mine to the crusher location.

WATER ENVIRONMENT MANAGEMENT

The proposed project will not have any significant impact on water environment. However, following precautions or mitigation measures shall be adopted to minimize the impact on water.

Impacts envisaged during mining operations:

1. Water logging.

NOISE AND VIBERATION ENVIRONMENT MANAGEMENT

As there is no heavy earth moving machinery is involved, there will not be any major impact is envisaged. But due to transportation significant noise levels are envisaged.Noise generation may be for an instant, intermittent or continuous periods, with low to high decibels.

Mitigation measures to control ambient noise levels:

1. Green Belt/Green Cover will be developed around mine pits to attenuate noise levels.
2. Employees will be provided with personal protection equipment (PPE's) at high noise area.
3. Operator enclosure will be provide with aquatics prove cabin.
4. Proper maintenance, oiling and greasing of machines at regular intervals will be done to reduce generation of noise.

SOIL CONSERVATION

Impacts envisaged during mining operations:

Not Envisaged

PLANTATION PLAN

Green belt will be developed along the access roads at mine premises. While selecting the plant species, preference will be given for planting native species of the area. Supply saplings to surrounding villagers for green belt development in their villages and encourage the plantation by means of social forestry. The species to be grown in the area are dust tolerant and fast growing species so that permanent green belt is created. Apart from the green belt and aesthetic plantation for elimination fugitive of emission and noise control, all other plantation efforts shall be decided and executed with the assistance and co-operation of the local community. Trees will be planted to arrest dust and they will also act as noise barrier. In these stone mining project FIVE yearly plans is proposed for the plantation purposes. Proposed species of trees which will be planted is mentioned below.

Malhargarh Sand Mine at Village-Malhargarh, Tehsil-Mungaoli, Dist – Ashok nagar of Sarpanch, Gram Panchayat Malhargarh (Area: 3.20 Ha)	EMP
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Table 1: Yearly Plantation Schedule

Year	No Of Trees
1 st	100
2 nd	100
3 rd	100
4 th	100
5 th	100
Total	500

Table 2: List of trees species proposed

S. No.	Scientific name	Common Name	Pollution control features
1	<i>Azadirachta indica</i>	Neem	Tolerant to SO ₂
2	<i>Mangifera indica</i>	Aam	Tolerant to Dust control
3	<i>Tectona grandis</i>	Sagon	Tolerant to Dust control
4	<i>Ficus benghalensis</i>	Bargad	Tolerant to Dust control
5	<i>Dalbergia sisoo</i>	Sheesham	Dust particles absorbance
6	<i>Ficus religiosa</i>	Peepal	Dust particles absorbance

BIOLOGICAL ENVIRONMENT

Aspects	Potential Impact	Mitigation Measures
Mining operation	Marginal vegetation loss	Mining operation will create marginal impact of local vegetation as presence of trees is scanty in the mine area. Predominant vegetation in the form of dense shrubs and seasonal herbs which will be affected during mining operation. However, it will be compensated by developing dense plantation around the safety zone
Dust emission due to mining and mineral transportation	Dust deposition on vegetation around periphery of ML area may retard the photosynthesis activities of plants	Transportation of excavated sand minerals will be carried out by covered truck. Regular water sprinkling within the mining area and also on haulage road will be carried out which helps to reduce the fugitive dust emission in the area. Plantation will be carried out in safety zone of mine lease area
Impact on Aquatic Ecology	Mining activity increases sediment load and total dissolved solids in streams due to erosion activity of overburden dump and loosened soil by blasting activity especially during rainy season may affect water quality of nearby	Dense plantation will be carried out around safety zone,

Malhargarh Sand Mine at Village-Malhargarh, Tehsil-Mungaoli, Dist – Ashok nagar of Sarpanch, Gram Panchayat Malhargarh (Area: 3.20 Ha)	EMP
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Aspects	Potential Impact	Mitigation Measures
	area	

OCCUPATIONAL HEALTH AND SAFETY MEASURES

1. The fugitive dust emission will be suppressed by water sprinkling on haul and transportation road. The level of dust emissions will be controlled as per permissible limit.
2. Dust mask will be provided to prevent from lung disorders etc.
3. All workers (regular and daily) will be registered under PHC for regular monitoring of their health and occupational diseases.
4. All employees regular or contractual will be selected for complete health check and occupational disease check in ESIC hospital which comes under Ministry of Labor.
5. Any suspected case will be further examined by PHC occupational health detection center.

ENVIRONMENT MANAGEMENT COST

Table 3: Environment Management Cost

S. No.	Environment Activities	Annual Expenditure (Rs. In lakhs)
1.	Air Pollution Control (dust suppression along road –mobile water sprinklers)	2.50
2.	Plantation & Maintenance 200 plants per year (Along transport road outside mine lease area @ Rs. 200 per plant	0.20
3.	Environment Monitoring (Air, Water, Noise & Soil Monitoring @ 1 times in a year)	1.00
4.	Personal protective equipments (Helmets, safety shoes, dust masks, ear plugs, etc)	0.20
5.	Provision of fencing around mine pit	0.25
6.	CSR activities in nearby villages	0.70
Total		4.85

ENVIRONMENT MONITORING PROGRAM

The project proponent shall follow the standard methods of six monthly monitoring various environmental parameters i.e. air, water, noise and soil through accredited laboratory and submit the compliance as per EC conditions.

Sr. No.	Attributes	Parameters	Frequency
1	Ambient Air Quality	PM10,PM2.5,SO ₂ ,NO _x	24 hourly samples, once each during each season (excluding Monsoon). 1 locating in mining area and 1 location in Malhargarh village
2	Noise levels	Noise levels in dB (A)	Hourly noise levels for 24 hours once each during each season (excluding Monsoon) 1 locating in mining area and 1 location in Malhargarh village
3	Water quality	Physical, Chemical and	1 ground water sample from Salaiya village once each during each season

Malhargarh Sand Mine at Village-Malhargarh, Tehsil-Mungaoli, Dist – Ashok nagar of Sarpanch, Gram Panchayat Malhargarh (Area: 3.20 Ha)	EMP
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Sr. No.	Attributes	Parameters	Frequency
		Bacteriological parameters Ground water level	
4	Soil quality	Physico chemical properties of soil	1 location from green belt area and 1 sample from nearby agriculture field. Once in a year (non-monsoon season)
5	Ecology	Survival rate of plantation	Greenbelt & Plantation in mine lease once in a year
6	Occupational Health & Safety	Medical health checkup of mine employees	Once in a year

Socio economic Measures

Socio-economic was been conducted in 4 to 5 villages of the study area out of villages. The selected villages under its CSR plan identifies the needs of the surrounding villages and has developed a social management plan to benefit the surrounding areas. Thus the surrounding villages have been benefited from the mining activity. Local employed generated approximate 18 numbers as per the qualification and skill unskilled. Has already carried out number of welfare activities in the area like: Proposed CSR activate

- Deeping of local pond
- Free Medical Camp (Eye & Dental check-up)
- Contribute to Local Area Development Fund
- Free drinking water supply facility to nearby village by Tanker

BUDGET FOR CSR ACTIVITIES		
S.No.	DESCRIPTION	COST TO BE INCURRED (PER YEAR)
1	Funds for maintenance of school aaganvadi kendra of nearly villages and construction children play ground	70,000
TOTAL		70,000

CONCLUSION

All possible environment aspects have been adequately assessed and necessary control measures have been formulated to meet the statutory requirements. Thus implementing this stone mining project will not have appreciable negative impacts.



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