

EXECUTIVE SUMMARY

FOR
MINING OF MINOR MINERAL
(ORDINARY SAND)
FROM BYALACHINTE & B.D.HALLI ORDINARY SAND BLOCK BLY-OSB-1,
BALLARI TALUK, BALLARI DISTRICT, KARNATAKA
AREA OF 5.26 HA, PRODUCTION CAPACITY -35638 TPA
SCHEDULE: 1 (a), CATEGORY: B1 (As ML area is <100ha.)

PROJECT PROPONENT

KARNATAKA STATE MINERALS CORPORATION LIMITED,
BALLARI, KARNATAKA



[DOC. No: MCPL/EMD/MIN/2019-21/09/01\(DEIA-V01\)](#)

[March, 2022](#)



PREPARED BY

MANTEC CONSULTANTS PVT. LTD.

*(QCI Accredited EIA Consultant at S.No.163 as per List of Accredited consultant
Organizations/Rev. 20/March 25, 2022)*

*(NABET Accredited EIA consultant, MoEF&CC & NABL approved Laboratory)
Environment Division, D-36, Sector-6, Noida-201 301, U. P., Ph. 0120-4215000,
0120-4215807 Fax. 0120-4215809,*

e-mail: environment@mantecconsultants.com

<http://www.mantecconsultants.com>

1. INTRODUCTION

M/s (KSMCL) Karnataka state Minerals corporation limited, ballari , Karnataka has proposed for Mining of Minor Mineral (Ordinary sand) from the river bed of River Hagari located in Byalchinte & B.D.Halli Village, District: Ballari, Karnataka over an area of 5.26 Ha with Production Capacity of 35638.0 TPA.

Project site is situated in Byalchinte & B.D.Halli Ordinary sand Block No. BLY-OSB-1. In Byalchint & B.D.HalliVillage, Ballari Taluk of Ballari District in the state of Karnataka over an extent of 5.26 Ha for a period of 05 (five) years in Survey No.: 162(P). The Modified Quarrying plan of this area for 13.00 Acres is approved by Department of Mines & Geology, Government of Karnataka vide letter no. MG004S220000105 dated 25.01.2022. (Copy enclosed as Annexure-III).

The lessee shall be under obligation to carry out mining in accordance with all other provisions as applicable under the Mine Act, 1952, Mines and Minerals (Development and Regulation) Act, 1957, Indian Explosive Act, 1884, Forest (Conservation) Act, 1980 and Environment (Protection Act), 1986 and the rules made there under, Wildlife (Protection) Act 1972, Water (Prevention and control of pollution) Act 1974 and Air (Prevention and Control of Pollution) Act, 1981. Commerce & Industries Secretariat Notification No. CI 357 MMN 2012, Bangalore dated 16-12-2013. Rule-8F & 8H (1) of Karnataka Minor Mineral Concession (Amendment) Rules - 2013 & Rule-31-R of Karnataka Minor Mineral Concession (Amendment) Rules - 2016.

This mining project falls under Category 'B1' as per EIA notification 2006 its amendments, as the area is less than 100 ha. The environment clearance in accordance with the EIA Notification 2006 and subsequent amendments has to be obtained from State Environment Impact Assessment Authority (SEIAA), Karnataka constituted by MoEF&CC, Govt. of India.

2. PROJECT PROPOSAL

M/s (KSMCL) Karnataka state Minerals corporation limited, ballari, Karnataka has proposed for Mining of Minor Mineral (Ordinary sand) from the river bed of River Hagari located in Byalchinte & B.D.Halli Village, District: Ballari, Karnataka over an area of 5.26 ha with Production Capacity of 35638.0 TPA.

The project falls under Category 'B1' of Schedule 1 (a), as per the EIA Notification, 2006

This report discusses the management plan for mitigation/abatement of adverse environmental impacts and enhancement of beneficial impacts due to mining. This report has been designed within the framework of various legislative and regulatory requirements on environmental and socio-economic aspects.

The committee recommended to prepare the combined EIA report for the cluster under Category B1 as per the latest amendments to the EIA Notification, 2006 vise S.O. 141 (E) dated 15.01.2016 & S.O. 2269 (E) dated 01.07.2016. The lease has been granted to the proponent for a period of 5 years by Office of the Senior Geologist Department of Mines and Geology Bellary Karnataka.

Lease Period: 5 Years

Table No. 1 Salient Features of the Project

S. No.	Particulars	Details																					
A.	Nature and Size of the Project	Mining of Minor Minerals (Ordinary sand, and s) from the riverbed of River Hagari by M/s Karnataka satete Mineral Corporation limited. Located in village- B.D. Hall, District- Ballari, Karnataka over an area of 5.26 Ha with Production Capacity of 35638.0 TPA.																					
B.	Location																						
Geographical Coordinates	Latitude and Longitude of	<table border="1"> <thead> <tr> <th>Pillar No.</th> <th>Latitudes</th> <th>Longitudes</th> </tr> </thead> <tbody> <tr> <td>S. No</td> <td>Latitudes</td> <td>Longitudes</td> </tr> <tr> <td>A.</td> <td>15°12'05.7"N</td> <td>77°04'10.7 "E</td> </tr> <tr> <td>B.</td> <td>15°12'04.2" N</td> <td>77°04'13.5"E</td> </tr> <tr> <td>C.</td> <td>15°12'11.8"N</td> <td>77°04'18.2"E</td> </tr> <tr> <td>D.</td> <td>15°12'14.1"N</td> <td>77°04'21.5"E</td> </tr> <tr> <td>E.</td> <td>15°12'15.1"N</td> <td>77°04'12.4"E</td> </tr> </tbody> </table>	Pillar No.	Latitudes	Longitudes	S. No	Latitudes	Longitudes	A.	15°12'05.7"N	77°04'10.7 "E	B.	15°12'04.2" N	77°04'13.5"E	C.	15°12'11.8"N	77°04'18.2"E	D.	15°12'14.1"N	77°04'21.5"E	E.	15°12'15.1"N	77°04'12.4"E
		Pillar No.	Latitudes	Longitudes																			
		S. No	Latitudes	Longitudes																			
		A.	15°12'05.7"N	77°04'10.7 "E																			
		B.	15°12'04.2" N	77°04'13.5"E																			
		C.	15°12'11.8"N	77°04'18.2"E																			
		D.	15°12'14.1"N	77°04'21.5"E																			
E.	15°12'15.1"N	77°04'12.4"E																					
Toposheet (OSM) No.	57 E/4																						
C.	Lease Area Details																						
	Lease Area	5.26 Ha																					
	Topography	Undulated (Riverbed)																					
	Site Elevation Range	402 mamsl <i>(Source: Mining Plan)</i>																					
D.	Cost Details																						
	Cost of the project	Rs. 40 Lakhs																					
	Cost for EMP	Rs. 5.92 Lakh/Yr (Capital Cost) Rs. 5.46 Lakh (Recurring Cost)																					
	OH&S	Rs. 1.00 Lakh/Yr (Capital Cost) Rs 5.00 Lakhs/Yr (Recurring Cost)																					
E.	Environmental Settings of the area																						
	Ecological Sensitive Areas (National Park, Wild Life Sanctuary, Biosphere Reserve, Reserve/ Protected Forest etc.) within 10 Km radius	NIL																					
	Inter-state boundary within 5 Km radius	None																					
	Nearest Town/ Major City	Ballari ~17.55 Km, WN																					
	Nearest Railway Station	Ballari Railway Station~17.2 km, W																					

	Nearest State Highway/ National Highway	SH-72, Road~3.0 km,
	Nearest Airport	Ballari Airport~20 km, SE (aerial distance)
	Nearest Post Office	Ballari head Post office ~16.55 km, W (aerial distance)
	Nearest Police Station	District police station Ballari~ 16.55 km.
	Medical Facilities	Government Hospital Moka ~ 5.5 Km Navodaya hospital ~18.00 Km
	Education Facilities	Government middle school- 4.5 Km
	Seismic Zone	Zone-III (As per 1893:2002)
	Water Body	Hagari River ~ 7.92 kms in S

3. PROJECT DESCRIPTION

The proposed project is for mining of Ordinary sand, and (Minor Mineral) by open manual method in riverbed over an area of 5.26 Ha. With proposed production capacity of 35638 TPA & The production as per replenishment study report 2018-2019 is 36198.7 TPA The total geological reserve is 240714 tons and total mineable reserve is 71277 T. Ultimate depth of a bench will be 1.0 m. Riverbed block will be further replenished during rainy season. Minerals will be transported by trucks. It is widely used in construction, buildings, bridges, roads and other infrastructure. It is free from clay and non-sticky in nature. Total water requirement for the project is 15.1 KLD. Total man power requirement for the project is 19 numbers. The site facilities like canteen, rest-shelter, first aid facility, water and electricity supply etc. will be provided as per requirement. There is no litigation pending against this project.

4. DESCRIPTION OF THE ENVIRONMENT

Environmental data has been collected in relation to proposed mining for Air, Noise, Water, Soil, Ecology and Biodiversity. The generation of primary data as well as collection of secondary data and information from the site and surroundings was carried out during post monsoon season i.e. October 2021 to December 2021.

The EIA study is being done for the Mine Lease (core zone) and area within 10 Km distance from

Table 2: Baseline Status

Attribute	Baseline Status
1. Ambient Air Quality	Ambient Air Quality Monitoring reveals that the minimum and maximum concentrations of PM ₁₀ were found to be 79 µg/m ³ to 46 µg/m ³ . Minimum and maximum concentrations of PM _{2.5} were found to be 48 µg/m ³ and 25 µg/m ³ respectively. The minimum

	<p>and maximum concentrations of NO₂ were found to be 26.0 µg/m³ and 14.0 µg/m³ respectively. The prescribed CPCB limit of SO₂ and NO₂ is 80µg/m³ for residential and rural areas has never surpassed at any monitoring station. The minimum & maximum concentrations of SO₂ for all the 7 AAQM stations were found to 15.0µg/m³ and 5.0µg/m³ respectively. From the above study and discussions, it can be concluded that air quality of the area is good as the levels are well within the prescribed limits as prescribed by CPCB.</p>
<p>2. Noise Levels</p>	<p>Ambient noise levels were measured at 7 locations around the proposed project site. The noise levels recorded during the day time were from 50.8 Leq dB to 42.8 Leq dB respectively and level of noise during night time were from 40.6 Leq dB to 36.4 Leq dB respectively.</p>
<p>3. Water Quality</p>	<p>Analyses of Ground water and Surface water were taken in the Post Monsoon Season October2021 to December 2021.</p> <p>Ground Water-Ground water monitoring was carried out in total 6 locations.</p> <p>Analysis results of Ground water;</p> <ul style="list-style-type: none"> • pH varies from to7.15 to 7.64 • Total Hardness varies from 284.00 to 564.00 mg/L. • Total Dissolved Solids varies from 487.00 to 1011.00 mg/L. • Fluoride varies from 0.65 to 0.94 mg/L • Chloride varies from 94.00 to 188.00 mg/L <p>Surface Water-Surface water monitoring was carried out in total 4 locations</p> <p>Analysis result of Surface water:</p> <ul style="list-style-type: none"> • pH varies from to 7.35 to 7.62 • Total Hardness varies from 204.00 to 252.00 mg/L. • Total Dissolved Solids varies from 312.00 to 420.00 mg/L. • Fluoride varies from 0.73 to 0.93 mg/L • Chloride varies from 64 to 82 mg/L • COD varies from 26 to 48 mg/L • BOD varies from 8 to 14mg/L
<p>4. Soil Quality</p>	<p>Soil Monitoring was carried out in total 7 locations.</p> <p>Monitoring data shows that the texture of soil at all locations is sandy Loam. The monitoring sites have Ordinary sand ranging</p>

	<p>from 62% to 66% in soil samples. Silt content varies from 18% to 24%, while Clay content varies from 12% to 16% in the soil samples.</p> <ul style="list-style-type: none"> • The data shows that value of pH ranges from 7.13-7.85. • Byradevanahalli shows maximum conductivity of 480 µmhos/cm, Meenahalli village shows minimum conductivity of 371 µmhos/cm. • Values of CEC range from 8.84 mg/100g as lowest at Byradevanahalli and 13.74 mg/100g as maximum at Jalihal. • Magnesium values ranges from 3.03 mg/100g as lowest at Moka and 3.83 mg/100g as highest at Karekal. • The average concentration of Nitrogen, Phosphorus and Potassium in the soil samples varies from 13.38 to 18.28 mg/100gm, 0.62 to 0.98 mg/100gm and 8.47 to 10.7 mg/100gm
--	--

5 Socio Economic Environment

Socio-Economic Impact Assessment (SEIA) refers to systematic analysis of various social and economic characteristics of human being living in a given geographical area (study area/impact area). The prime objective of SEIA is to identify and evaluate potential socio-economic and cultural impacts of a proposed development project on the lives & conditions of people, their families and communities.

The demographic profile of the study area is given below:-

S. No.	Description	Number	Percentage to Respective Total
1	Total Population	105923	100
	Male	53516	50.5
	Female	52407	49.5
	Sex Ratio	979	
2	Population (0-6 age group)	14805	100
	Male	7576	51.2
	Female	7229	48.8
	Sex Ratio	954	
3	Population- Scheduled Caste	18511	100
	Male	9397	50.8
	Female	9114	49.2
	Sex Ratio	970	
4	Population- Scheduled Tribe	32473	100
	Male	16206	49.9
	Female	16267	50.1
	Sex Ratio	1004	

5	Total Literates	51803	100
	Male	31710	61.2
	Female	20093	38.8
	Gender Gap in Literates		22.4
6	Overall Literacy Rate		56.9
	Male		69.0
	Female		44.5
	Gender Gap in Literacy Rate		24.5
7	Total Workers	55429	100
	Male	30949	55.8
	Female	24480	44.2
	Gender Gap in Work Participation		11.6
8	Main Workers	47793	100
	Male	28057	58.7
	Female	19736	41.3
	Gender Gap in Work Participation		17.4
9	Marginal Workers	7636	100
	Male	2892	37.9
	Female	4744	62.1
	Gender Gap in Work Participation		24.2
10	Household Industrial Workers	651	100
	Male	409	62.8
	Female	242	37.2
11	Total Agricultural Workers	39623	100
	Male	21813	55.1
	Female	17810	44.9
12	Cultivators	17286	100
	Male	11782	68.2
	Female	5504	31.8
13	Agricultural Labour	22337	100
	Male	10031	44.9
	Female	12306	55.1
14	'Other Workers'	7519	100
	Male	5835	77.6
	Female	1684	22.4

1.1.1 Biological Environment

It is observed that the **BLY-OSB -1**, River ordinary sand mine study area is dominated by agriculture fields. However, the mine lease area is Govt. waste land which is dominated by shrubby species (*Agave sp., Acacia sp., Albizia sp., Calotropis procera, Mimosa hamata, Lantana camara and Prosopis sp.* etc. The species observed in the study area are generally found in abundance.

Since the core area comprises mainly waste land and is having predominantly shrubby vegetation, it does not support higher faunal species. No Schedule-I faunal species as per the Indian Wildlife (Protection) Act 1972 has been reported from the study area.

Mining which leads to the removal of channel substrate, re-suspension of streambed sediment and stockpiling on the streambed will have ecological impacts. These impacts may have an effect on the direct loss of stream reserve habitat, disturbances of species attached to streambed deposits, reduced light penetration, reduced primary production, and reduced feeding opportunities. Ordinary sand mining generates additional traffic which also impacts the environment.

The proposed project of river bed ordinary sand mining shall be carried out on the riverbed of Hagari River. The project site area is waste land, devoid of vegetation except a few thorny bushes on the banks of the river. The project shall also not lead to any change in land use and will be replenished every year after successive rains. The proposed mining activity, which although is an economically gainful activity, also constitutes river training work. It allows for necessary dredging activity which may otherwise lead to flooding of the surrounding area.

There shall be negligible dust emissions during loading of the truck or effluents from the project site. Mining activities will not disturb the existing aquatic ecology as there is no effluent discharge proposed from the River Ordinary sand quarry and mining will be done during dry non- monsoon season.

1.1.2 ANTICIPATED ENVIRONMENT IMPACT AND MITIGATION MEASURES

1.1.3 Anticipated Impact

The air quality in the mining area depends upon the nature and concentration of emissions and meteorological conditions.

1.1.4 Anticipated Impact

- Mining Operation carried out by opencast manual & semi mechanized method generate dust particles due to various activities like Loading & Unloading of ordinary sand, and Transportation.
- The impact on ambient air quality in the area surrounding the mining area depends upon the pollutant emission rate and prevailing meteorological conditions. As it is an open cast semi mechanized mine, particulate Matter (Dust) of various sizes is the only pollutant of any significance.
- Proper mitigation measures like water sprinkling will be adopted to control dust emissions.
- Masks will be provided to workers.
- To control the emissions regular preventive maintenance of equipment will be carried out on contractual basis.
- Green belt of adequate width will be developed.

1.1.5 NOISE ENVIRONMENT

The area is general represents calm surroundings. There is no heavy traffic, industry or noisy habitation in the area except the existing mine. As the project is proposed for open cast manual mining method there will be no blasting or drilling activities.

1.1.6 Anticipated Impact

- The source of Noise pollution will be the vehicular movements.
- Noise generated by manual extraction of river bed material, using shovels, crowbars etc., will be negligible.

1.1.7 Mitigation Measures

- Proper maintenance of all transportation vehicles will be carried out which help in reducing noise during operations. No other equipment except the transportation vehicles will be allowed.
- Noise generated by hand equipment will be negligible and will not cause detectable adverse impact.
- Awareness will be imparted to the workers about the permissible noise levels and maximum exposure to those levels.

1.1.8 WATER ENVIRONMENT

The impact of mining project on groundwater hydrology and surface water regime are site specific and depends upon the characteristics of the mineral, hydrogeology and requirement of groundwater for other uses.

1.1.9 Anticipated Impacts

- The Mining in the riverbed area may cause the groundwater contamination due to the intersection of the water table.
- Waste water disposed from the mining activity may contaminate the surface water.
- River recharges the ground water; excessive mining may be reducing the thickness of natural filter materials (Sediments), through which the ground water is recharged.

1.1.10 Mitigation Measures

- Mining will be done above the water table as well as river bed water level therefore much impact on water regime is not accepted.
- Proper analysis/Monitoring will be done to check the ground water

1.1.11 LAND ENVIRONMENT

Impact assessment study on land environment can be done by considering land use pattern/land cover, topography, drainage pattern and geological features of the mine site as well as the study area.

1.1.12 Anticipated Impact

- Mining activity will impact river bed topography by formation of excavation voids.
- River bed mining may bring in some change in topography at the nearby area of the mine lease
- Stacks of solid waste generated from mining activity may hinder the flow of water in monsoon season.

1.1.13 Mitigation Measures

Adopting suitable, site specific mitigation measures can reduce the degree of impact of mining on land. Some of the land-related mitigation measures are as follows:-

- Excavated pits will get replenished annually in monsoon itself & will be restored to original
- Mining work will be executed only by manual open cast method and the depth of pits will be restricted up to 3.00 meter or the river water level whichever is less.
- Mineral will be mined after leaving the 25% width as a safety zone on both sides of the riverbed.

1.1.14 SOCIO ECONOMIC

1.1.15 Anticipated Impact

- Impact on the Demographic Composition
- Impact on Employment Opportunities

1.2 Solid Waste

1.2.1 Anticipated Impact

- As there is practically no soil cover observed in the river bed, this RBM project does not involve any waste generation. Thus, no waste dump sites are needed for the project. However, there will be 19 workers on site.
- No municipal waste other than domestic sewage shall be generated.

1.2.2 Mitigation Measures

- Only clayey soil generated during mining process which will be used for the plantation.
- Domestic sewage will be disposed off into septic tanks followed by soak pits

1.3 TRAFFIC ENVIRONMENT

1.3.1 Anticipated Impact

- The increase in traffic density will lead to the air pollution and it cause the effect on human health like damage to lung tissue, cancer, asthma etc.
- The movement of vehicles cause the noise pollution

1.3.2 Mitigation Measures

- Vehicles with PUC certificate will be hired.
- Regular maintenance of vehicles will be compelled to ensure smooth running of vehicles.
- Regular health checkups camps will be organised for the safety purpose of the workers.
- Unnecessary blowing of horn will be avoided.

1.3.3 Analysis of alternatives

No alternative site had been considered since proposed Capacity Enhancement is in existing ordinary sand mine and hence it is site specific.

1.3.4 ENVIRONMENT MONITORING PROGRAMME

KSMCL has formulated well laid-out Environmental Policy, wherein preservation of environment has been accorded a most strategic and prime position. The various protocol procedures in connection with communication channels upwards and downwards, for dealing with violations or departures in environmental standards involvement of Board of Directors as well as shareholders about such incidences, etc, have been described in detail in chapter VI. Regular monitoring of

environmental parameters of immense importance to assess the status of environment during project operation will be done. With the knowledge of baseline conditions, the monitoring programme will serve as an indicator for any deterioration in environmental conditions due to operations of the project, which will enable to take suitable mitigation steps in time to safeguard the environment.

1.3.5 ADDITIONAL STUDIES

The possible risks in the case of river bed mining project are bank erosions, floods, accidents due to the transport etc. At present the mining is proposed in a mild sloping forest land in river beds. Pits will be created of limited depth 1.0 m from first to fifth year or river water levels whichever less, thus the chance of failure of pit slope not seems to be appeared,

1.3.6 PROJECT BENEFIT

The proposed project brings overall improvement in the locality, neighbourhood and the state by bringing employment generation at local level and revenue to state government. Hence it will be helpful for the economic growth and support to enhance quality of life through employment

1.3.7 ENVIRONMENTAL COST BENEFIT ANALYSIS

It is considered desirable that the mining project may be implemented. Project cost for the proposed Mining project having area of 5.26. Ha. Falling in located in village- Byalchinte & B.D. Halli District-Ballari, and Karnataka is Rs. 40 Lakh.

1.3.8 ENVIRONMENTAL MANAGEMENT PLAN

As per Above discussion there is no major impact on the environment due to mining except fugitive emission in the form of dust generated during handling of mineral. The adequate preventive measures will be adopted to contain the various pollutants within permissible limits. Plantation development will be carried out along the approach roads, around Govt. buildings etc. It will prove an effective pollution mitigate technique, and help avoid soil erosion during monsoon season. Employment opportunities will be provided to the locals only as providing extraction of minerals from the mine site is the only prevailing occupation for them for their livelihood. A budget of Rs. 5.92 Lakhs (Capital Cost) & Rs. 5.46 Lakh (Recurring Cost) under EMP head are incurred by Project Proponent.

1.3.9 CONCLUSION

The proposed project will provide the employment to local people in different activities such as mining, transportation and plantation activities. The project activity will not have any major impact on the environment. At post mining stage of proposed project, the existing land use will remain same i.e. riverbed, and it will get replenished yearly during monsoon season. Also the extracted ordinary sand, will be used in construction activities like building, infrastructure facilities. The Corporate Social Responsibility initiatives will have a positive impact on socio economic environment of the region.