EXECUTIVE SUMMARY

1. Introduction

The proposed Jodhpur Sandstone Cluster 01 Mining Project comprise of 42 mine leases with total area of 172.9203 Ha., and is situated near villages- Barli, Jakhdo Ki Dhani, Goyolo Ki Dhani, Baga & Narwa, Tehsil, District Jodhpur and State Rajasthan. The mining cluster is private land with the cluster covering **354.6418 Ha**.

The cluster was granted ToR on 07.11.19, vide letter no. F1(25)/Cluster-1/Jodhpur/2019-20/10777. This report is prepared in compliance to the ToR points. Draft EIA report is prepared for obtaining EC from SEIAA, Rajasthan for the proposed cluster of **Jodhpur Sandstone Mining Cluster 01** having lease area **172.9203 Ha**. The proposed cluster falls under **Category B1** & **Schedule 1(a)** of Mining of Minerals.

1.1 Identification of Project

1.1.1 Project Proponent

The Mining Engineer,

Office of the Mining Engineer,

Department of Mines and Geology, Jodhpur

1.1.2 Laboratory Details-

Shri Om Testing & Research Laboratory

(NABL Accredited Laboratory)

Plot No. 296, 1st FNG Road

Sector - 121, Ghari Chaukhandi

Noida - 201301

2   Project Description

2.1 Need of The Project

Sandstone is having a great value in domestic as well as international. The cluster will bring various benefits to the lease owners and to the people in its vicinity. Following are some benefits listed below –

1.   It will add economy to the country;

2. It will provide direct employment to the people of nearby villages, which will help in improving their livelihood;

3. It will provide indirect employment to the people associated with the cluster activities like transportation, trading etc.;

4. The cluster will felicitate green belt & landscape development and will enrich the flora of

S. No.	Details of Project	Description
1	Cluster Name	Jodhpur Sandstone Mining Cluster (Area 172.9203 Ha)
2	Location of Cluster	Villages Barli, Jakhdo Ki Dhani, Goyolo Ki Dhani, Baga & Narwa, Tehsil & District Jodhpur, State Rajasthan
3	Latitude & Longitude	Cluster Latitude: 26° 21' 50.233"N Cluster Longitude: 72° 56' 54.137"E
4	Topo-sheet number	45B/15
5	Mineral	Sandstone
6	Total Geological reserves	9,47,49,228 MT (approx.)
7	Total Mineable reserves	5,53,55,730 MT (approx.)
8	No. of Mines	42
9	Life of Cluster	153 years
10	Average Proposed production	8,60,645 MTPA
11	Method of mining	Opencast Semi-Mechanized Method
12	No of working days	300 days
13	Water demand	2.5KLD per mine lease
14	Sources of water	The drinking water is made available from nearby villages. During monsoon period, rain water accumulated in the pits will be used for dust suppression.
15	Man power	820 people
16	Nearest railway station	Mandore Railway Station is at a distance of about 9.5 km in East direction.
17	Nearest State Highway/	NH-114 is at a distance of about 5 km in South direction.

	National highway	SH-61 is at a distance of 11.5 km in the NE direction.
		MDR-104 is at a distance of 1.8 km in the NE direction.
18	Nearest airport	Jodhpur Airport is about 16 km in SE direction.
19	Seismic zone	Seismic Zone II

5. the area;

6. It will provide various socio-economic benefits to the people like education facility, medical camp facility, water supply facility etc.;

7. The cluster will benefit the state as well as central government in the form of Royalty, sales tax, income tax;

8. The cluster will ensure efficient use of the resource.

Therefore, cluster will have a great importance both in the regional as well national prospective.

2.2 Location of the Project

The proposed mining cluster is situated near **Villages Barli, Baga, Goyala Ki Dhani, Jakhdo Ki Dhani and Narwa, Tehsil Jodhpur, District Jodhpur and State Rajasthan**. Mandore Railway Station is at a distance of about 9.5 km in East direction. Jodhpur is at a distance of 15.5 km in SE direction. NH-114 is at a distance of about 5 km in South direction, SH-61 is at a distance of 11.5 km in the NE direction and MDR-104 is at a distance of 1.8 km in the NE direction.

2.3 Salient features of Cluster

The brief details of cluster presented in below mentioned table:

2.4 Types of Mining

2.4.1 Mining Method

The mining will be done with the help of tools such as Drills, Jack-Hammers, Compressors, Hand shovel, Picks, and Excavators. Excavation of minerals needs removal of overburden. Mining will be done by open cast semi-mechanized method. The cutting of rocks will be done by wire saw method and lifting of blocks by crane/excavator. For systematic working of open cast mines, benching will be done. The benching for weathered rocks, soil and murrum (OB) will be made separately. The height of the benches will not be kept more than 5 m for any mineral and width of the benches will always be kept more than the height. Roads and ramps will be made at

gentle gradient during mining as per requirement. Drilling and blasting will be adopted for mining, as per joints present in the rocks. Controlled blasting measures will be adopted.

2.4.2 Life of Mine: The maximum life of the mine present in the cluster as per approved mine plans will be 153 years.

2.4.3 Size/Magnitude of Operation

The maximum annual production of the cluster is targeted at **41,675.76 MTPA (ROM)** with a maximum cumulative cluster capacity of approximately **8,60,645 MTPA (ROM)**. The average number of working days in a year would be 300.

2.4.4 Reclamation and Rehabilitation of Mined Out Area

Reclamation will be done by adopting two measures, first is backfilling and the other is formation of water reservoir. At end of the mine life of the cluster, a part of the area will be backfilled with excavated O.B./waste and top soil spread over it. The land may be used for agriculture purposes and some trees will also be planted over it to preserve the aesthetic look of the area.

About 57 Ha, i.e. 33 % of total cluster area will be covered along the boundary barriers of the individual mine leases for plantation and in suitable areas after consultation with concerned authority by the end of mine lives.

2.5 Post Mining Land Use Conceptualized

Plantation will be undertaken along the periphery of each constituent mine lease areas and in suitable areas after consultation with concerned authority. Plantation will also be taken up in open spaces within the cluster area where no mining activity is under way. Thick and planned plantation will help to reduce noise pollution as well as spreading of dust due to blasting and excavation of minerals with heavy machinery. It will also enhance the aesthetic value of the entire area forming the cluster. The aim is to carry out total afforestation over an area measuring about 57 Ha of land before the lease period of 42 mines comes to an end.

2.6 Overburden/Waste Management

Overburden generated during first five years shall be dumped inside the cluster. The height of the waste dump will be in the range of 2m to 10m at the end of five years. Backfilling shall be started after confirmation of non-availability of mineral beneath. Waste/OB material generated during course of mining in the first five year will be stacked separately as per approved mine plans.

2.6.1 Maximum height and Spread of dumps

O.B. generated during first five year shall be dumped at near by boundary pillar of each mining lease as per approved mining plan of the respective leases. After the mining simultaneously the area will be backfilled shall be started after confirmation of non-availability of mineral beneath. So the waste dump and height will be reduced.

2.6.2 Liquid Effluent

There is no liquid effluent generation from the proposed project. However the domestic effluents are collected by a sewerage system and biological treatments is adopted by means of septic tanks and soak pits.

2.7 Beneficiation/Processing

There is no major beneficiation of sandstone rock at the mine site. The Sandstone blocks are transported to the loading platform from where manual dressing and sizing by physical and visual observation are done as per market demand or requirements.

2.8 Water Requirement

The major areas of water consumption are dust suppression, domestic purposes and green belt development. The main source of water is through tankers from the nearby villages. Water requirement in the cluster area will be met by tanker supply on daily basis. Approximately 2.5 KLD of water will be required by each mine in the cluster.

2.9 Power Supply

The mines will work in one shift (i.e., general shift) during day time only. Since, no mining activities will be carried out during night time, electricity supply is not required.

The machinery to be used in the mines will be diesel operated. Hence, no power supply is required for them.

2.10 Manpower Requirements

Approximately 400 skilled and 850 unskilled persons will be getting employment due to operations in this cluster. In total, approximately **1200 persons** will be benefitted.

2.11 Mining Equipments

The mines will be developed and operated using the drilling machine, wire saw, hydraulic excavator, crane, Hyva, jib cranes, jack hammers and compressor for the purpose of excavation, loading and transportation.

2.12 Blasting

The blasting operations in the mine will be carried out by deep hole drilling, using delay detonators, which reduce the ground vibrations. Further, the ground vibrations will be controlled by using shock tubes with nonelectric delay detonators.

2.13 Existing Infrastructure

There is no existing infrastructure facility is available in the area but it has been proposed to construct and provide site services like office, first aid, rest shelter; urinals etc. as per the statutory requirements.

3. Description of Environment

Baseline study was conducted in pre-monsoon period during April- June 2018. To assess the baseline environmental quality land environment, water environment, ambient air environment, noise quality, ecological status and sociological survey was conducted. NABL accredited laboratory was used for baseline data generation. The study area was divided in two zones, core zone was considered area within mine lease and buffer zone considered area outside 10 km radius from project site. Different environmental attributes were considered for baseline environmental data.

3.1 Land Environment

3.1.1 Land Use in Core Zone

The present land use of cluster as per government record is private land. Total area of the cluster is 172.9203 Ha out of which only 75.4087 Ha area will be mined out during the proposed 5-year mining period.

3.1.2 Land Use in Buffer Zone

The buffer zone mainly have agricultural land (48.96%), forest covers an area of 16.70%, water body contributes 0.66 %. Waste land contributes 0.85 %, open scrub 29.66%, and settlement is 3.16 % of total study area.

3.2 Seismicity of The Area

The Bureau of Indian Standards publishes seismicity map and codes in India. Jodhpur Sandstone Mining Cluster falls under Seismic Zone II. Seismic Zone II has been classified as Low Damage Risk Zone.

3.3 Soil Environment

Soil physical and chemical parameter has been analysed at 6 locations including near cluster. Physical characteristics of soil were characterized through specific parameters viz bulk density, porosity, water holding capacity, pH, electrical conductivity and texture. Soil pH plays an important role in the availability of nutrients. Soil microbial activity as well as solubility of metal ions is also dependent on pH. In the study area, variations in the pH of the soil were found to be slightly basic (7.34 to 7.84). Electrical conductivity is a measure of the soluble salts and ionic activity in the soil. In the collected soil samples, the conductivity ranged from 184 – 281 µmhos/cm. The soils with low bulk density have favorable physical condition where as those with high bulk density exhibit poor physical conditions for agriculture crops.

3.4 Water Environment

To analyse the surface and ground water quality of study area, sampling has been carried out by NABL accredited laboratory for primary data. Secondary data has been collected from CGWB district brochure of Jodhpur. Sampling of surface and ground water was collected as per IS 3025 Part I.

3.4.1 Surface Water Quality

Surface water quality has been analysed from the Samand Lake and Kailana Lake near the cluster.

After analysis it was found that pH was 7.58 and 7.85 in the sample SW-1 and SW-2 respectively. Electrical conductivity was measured as 269 and 290 µmohs/cm in the sample SW-1 and SW-2 respectively. Total dissolved solid was found to be 169 and 174 mg/l in the sample SW-1 and SW-2 respectively. Dissolved oxygen was present at 6.8 and 7.7 mg/l in the sample SW-1 and SW-2 respectively. Magnesium Hardness (as $CaCO_3$)was found to be 40 and 54 mg/l and Fluoride was found 0.4 and 0.5 mg/l in the sample SW-1 and SW-2 respectively.

The result shows good concentration of dissolved oxygen and low BOD which is essential for the survival of fish and aquatic species, therefore, the quality of the surface water collected from both the monitoring location is reasonably good.

3.4.2 Ground Water Quality

Ground water was collected from 6 locations Maximum fluoride was found 0.5 mg/l at GW -1 and GW-4 and minimum concentration were found 0.1 at GW 5 and GW 6.

Chloride concentration more than 250 mg/l leads to corrosion in pipes and palatability. Chloride concentrations were found in the range of 184-213 mg/l in which maximum chloride concentration were observed at GW-1.

Nitrate concentrations were found less than permission limit in the range of 11-15 mg/l with maximum concentration found in location GW 5.The sulphate concentration was found in the range of 74-93 mg/l with maximum concentration found in location GW 2.Calcium values were found in the range of 56 to 69 mg/l and magnesium values were found between 22 to 28 mg/l. Total dissolved solid was found to be around 884 to 989 mg/l in the sample respectively. Total hardness was found between 235-291 mg/l.

3.4 Air Environment

Site specific meteorological data was collected by installing weather station near to cluster site. The ambient air quality at selected 6 locations was carried out as per Indian standards guidelines and monitoring stations was selected as per CPCB manual. April 2018 to June 2018 was selected for ambient air quality study. Name of villages where AAQM locations were selected are near

project site, Bairu, Jakhdo ki dhani, Barli, Goylo ki Dhani and Narwa. Predominant wind direction during study period was found from South West to North East.

Ambient air quality monitoring was conducted as per Indian standard and CPCB guidelines. Gravimetric method was used for particulate matter quantification and spectrophotometer method was used gaseous analysis. Samples were collected using Respirable Dust Sampler make Envirotech. Ambient air quality monitoring stations were selected on the basis of predominant downwind direction and anticipated receptor due to truck transportation of sandstone.

Parameter wise 98th percentile maximum and minimum values were observed at all the 6 monitoring locations. The minimum and maximum level of PM2.5 recorded within the study area

Suspended Particulate Matter ($PM_{2.5}$)

Suspended particulate matter in general terms is the particulate matter is suspension in ambient air. $PM_{2.5}$ refers to particles with a diameter of less than 2.5 µm. The minimum and maximum level of $PM_{2.5}$ recorded within the study area was in the range of 27.8 and 57.4 µg/m^3 respectively with the 98th percentile ranging between 46 to 56.4 µg/m^3.

The 24-hourly average values of $PM_{2.5}$ were compared with the NAAQS and found that all sampling stations recorded in the study area are within the applicable limits i.e., 60 µg/m^3 for $PM_{2.5}$ in rural areas.

Suspended Particulate Matter (PM_{10})

PM_{10} refers to particles with a diameter less than 10 microns. Depending on their size, coarse particles can lodge in the trachea (upper throat) or in the bronchi.

The minimum and maximum level of PM_{10} recorded within the study area was in the range of 57.8 and 91.4 µg/m^3 respectively with the 98th percentile ranging between 76 to 91.4 µg/m^3.

The 24-hourly average values of PM_{10} were compared with the NAAQS and found that all sampling stations recorded in the study area are within the applicable limits i.e., 100 µg/m^3 for PM_{10} in rural areas.

Sulphur Dioxide (SO_2)

Sulphur Dioxide gas is an inorganic gaseous pollutant. Sulphur Dioxide emissions are expected to be emitted wherever combustion of any fuel containing Sulphur takes place. The Sulphur in the fuel will combine with oxygen to form Sulphur Dioxide.

The minimum and maximum concentration of SO_2 recorded within the study area was 5.1 and 8.7 µg/m^3 respectively with the 98th percentile ranging between 6.8 to 8.5 µg/ m^3.

The 24-hourly average values of SO_2 were compared with the NAAQS and it was found that all sampling stations recorded values are below the applicable limits 80 µg/m^{3}for rural areas.

Oxides of Nitrogen (NO₂)

The important sources of oxides of Nitrogen are from utilities and auto exhaust due to vehicular movement in proposed cluster.

The minimum and maximum level of NO_2 recorded within the study area was in the range of was 14.4 and 24.9 µg/m^3 respectively with the 98th percentile ranging between 19.3 to 24.8 µg/m^3. The 24-hourly average values of NO_2 were compared with the NAAQS and it was found that all sampling stations recorded values are below the applicable limits 80 µg/ m^3 for rural areas.

Carbon Monoxide (CO)

Carbon monoxide is a colourless, odourless, and tasteless gas that is slightly dense than air. It is toxic to haemoglobic animals when encountered in concentrations above about 35 ppm. In the atmosphere, it is spatially variable and short lived, having a role in the formation of ground-level ozone.

The minimum and maximum level of CO recorded within the study area was in the range of was 300 and 440 µg/ m^3 respectively with the 98th percentile ranging between 515 to 666 µg/ m^3.

The 1 hourly average values of CO were compared with the NAAQS and it was found that all sampling stations recorded values are below the applicable limits 4000 µg/ m^3 for rural areas.

3.5 Noise Environment

Project site baseline noise quality is in between the permissible limit as per CPCB guidelines. Noise pollution is the result of modern industrialized urban life and congestion due to over population.

Noise levels of all the 6 receptor locations were monitored as per guidelines specified by Central Pollution Control Board. The names of the locations are near Project Site, near project site, Bairu, Jakhdo ki dhani, Barli, Goylo ki Dhani and Narwa 24 hourly monitoring of noise

environment was conducted and divided in to day and night levels whereas 6am to 10pm was considered day time values and 10 pm to 6 am was considered as night values.

In residential areas, noise level is ranging between 41.9 dB(A) recorded at NQ-5 to 54.3 dB(A) recorded at NQ-4 during day time and 35.2dB(A) recorded at NQ-3 to 41.8 dB(A)recorded at NQ-4 during night time.

The project site is located in the industrial area, here, the noise level is recorded at 62.8 dB(A) during day time and 58.4 dB(A)recorded during night time.

3.6 Biological environment

Flora and fauna survey was done at core and buffer zone of the study area. This was observed that no flora species are present within mine lease area due to mining activity had started since many years after lease granted to project proponent. The wild plant species are anticipated in waste land only.

3.6.1 Tree species were found in waste land and along road side green belt. The observed tree species common names are Neem, Shhesham, Siris, Peepal, Aam, Khair etc.

3.6.2 Survey was conducted for fauna species, birds, mammals and reptile species were found within study area, and no scheduled one species were found.

3.7 Socio-Economic Environment

The details concerning the demographic structure of the study area were collected from Census 2011 of Jodhpur district of Rajasthan State. The salient features are as follows-

1. There are 19 villages and 2 town in the study area, all village falls in Jodhpur district.
2. Total population of study area is **1117188.** The percentages of male & female population are **52.56 % & 47.44 %** respectively
3. Total household in the study area are **206951** with a family size of 5.40.
4. Total number of literates in the study area is **775467**(69.41%).
5. Sex ratio (number of Females per thousand Male) of the study area is **903** which shows that male population is higher in the study area as compared with the female population.

6. Out of the total population Scheduled Caste population in the study area is **143906**(12.88%) and Scheduled Tribe population is **26766** (2.39%).

4. Anticipated Environmental Impacts and Mitigation Measures

4.1 Impact on Land Use

4.1.1 Anticipated Impacts

Land use of proposed cluster will be change at the end of mines closure. The mined-out areas are approximately 75.4087 Ha. at the end of 5-year mining period. Overburden generated during first five years shall be dumped inside the cluster. The height of the waste dump will be in the range of 2m to 10m at the end of five years. At the end of life of various mines located within the proposed cluster, they will be converted to a water reservoir.

Mitigation measures have been proposed for land use change. Plantation will be done in the statutory boundaries. The mined-out areas will be converted to water reservoir. Dust suppression will be done regularly during the mining period.

4.2 Impact on Water Environment

The quality of ground water near the cluster is less likely to be degraded as there are no toxic elements present in Sandstone mineral which can contaminate the groundwater. There is no surface water body which can be affected due to the cluster. Water table will not be intersected due to the mining activities.

4.2.1.1 Surface Water

There are no drainages passing through the cluster which will be affected by mining activities. So far as surface water is concerned, there are no perennial rivers or other water bodies.

4.2.1.2 Ground Water

Ground water level is at the moderated depth with average depth of 60 m to 70 m below the surface. There will be no intersection with the ground water table with the working depth of mining. Hence, neither groundwater table nor the general surface drainage pattern will be affected. Thus, there will not be any adverse effect on water pollution.

4.3 Impact on Air quality

The ambient air quality is anticipated to be change by the vehicular movement. Suspended particulate matter due to excavation and gaseous parameters like sulphur dioxide, nitrogen oxides and carbon monoxide are anticipated to change.

Different sources have been considered while calculating emission factors. The mining operation will be carried out by semi-mechanized method. Crane of 40 MT capacity will be used for loading of mineral and trucks are used for the purpose of transportation. Other than this, jackhammers& wire saw will be used for excavation.

Drilling operations and application of mining machineries are the sources of air pollution in Sandstone mining. Sandstone mining is expected to elevate the level of air borne suspended particulate matters and dust due to various activities which involve opencast mining, loading and transportation of Sandstone.

4.4 Noise Environment

Noise will be generated within the cluster area due to drilling machines, loading equipment and blasting operations. Noise generation due to transportation trucks will be temporary for any receptor location.

4.5 Impact on Biological Environment

There is no flora & fauna present within project site or mine lease area. Dust generated due to transportation at haul road may cause harmful impact due to stomata block of plants to prevent photosynthesis. Water sprinkling will be done regularly to reduce the impact of dust emission. No surface water body likely to get affected due to proposed cluster. Green belt will be developed in 33 % of total mine lease areas present in the cluster.

4.6 Impact on Socio-Economic Environment

There is no project affected family within proposed cluster area and no negative impact will be on social community. The project will have positive impact to nearby communities by providing CSR activities and employment to local people working at the mining sites.

4.7 Traffic Due to Transportation

Total 220 trucks will be added to the transportation network due to the proposed cluster. The total PCU/day for location L1 is 824.1 PCU/day, for L3 is 851 PCU/day, L5 is 838 PCU/day as per IRC guidelines. After addition of incremental vehicles, for L1 location the LOS will be 'C' i.e. Good / Average / Fair (V/C Ratio 0.41), for L3 location the LOS will be 'A' i.e. Excellent (V/C Ratio 0.06), for L5 location the LOS will be 'A' i.e. Excellent (V/C Ratio 0.06). *(IRC106:1990)*

5 Alternative Technology and Site Analysis

Since the mining activity is site specific and it depends upon the occurrence of minerals and ores. Therefore, alternative site analysis is not done. Opencast semi-mechanized method for sandstone mining for the proposed cluster mining site is efficient, so no alternative mining method is proposed.

6. Environmental Monitoring Programme

1. To ensure proper implementation of environmental management plan. Environmental monitoring program has been planned.

2. Air pollution, water pollution, noise pollution, soil analysis will be conducted six monthly to ensure compliance conditions in environmental clearance.

3. PM10, PM2.5, NOx and SO2 with CO will be monitored.

7. Additional Studies

This is Draft EIA report; public hearing is yet to be conducted. Details of public hearing will be incorporated after conducting public hearing.

7.1 Precautions to Prevent Disaster Occurrence during Mining Period

1. All safety precautions and provisions of Mine Act 1952, Metalliferrous Mines Regulations 1961 and Mines Rules1955 will be strictly followed during all mining operations;

2. Entry of unauthorized persons in the mining areas will be prohibited;

3. Firefighting and first-aid provisions in the mine office complexes and mining areas;

4. Provisions of all the safety appliances such as safety boots, helmets, goggles etc. will be made available to the employees free of cost for their use;

5. Training programmes for all the employees working in hazardous premises; under Mines Vocational Training Rules all employees of mines shall have to undergo the training at a regular interval;

6. Working of mines, as per approved plans and regularly updating the mine plans;

7. Regular maintenance and testing of all mining equipment as per manufacturer's guidelines;

8. Suppression of dust on the haulage roads and loading & unloading points.

7.2 Measures to Prevent Accident Due to Trucks and Tippers

1. All transportation within the main working area will be carried out under the direct supervision and control of the management;

2. The vehicles must be maintained in good repairs and checked thoroughly at least once a week by a competent person authorized for this purpose by the management;

3. Broad signs will be provided at each and every turning point especially for the guidance of the drivers of vehicles.

4. To avoid dangers while reversing the vehicles, especially at the embankment and turning points as far as possible, be made man free. There should be a light and sound device to indicate reversing of trucks;

5. A statutory provision of the fence, constant education, training etc. will go a long way in reducing the incidence of such accidents.

7.3 Disaster Management Plan

1. Rescue and medical treatment of casualties;

2. Safeguard other people;

3. Minimize damage to property and the environment;

4. Initially contain and ultimately bring the incident under control;

5. Secure the safe rehabilitation of affected area;

6. Preserve relevant records and equipment for the subsequent inquiry into the cause and circumstances of the emergency.

8. Project Benefits

1. Employment will be given to **1200 persons** nearby the proposed cluster. All the labours will be from nearby villages;

2. Around 1200 trees will be planted per year for green belt development.

3. The proposed cluster will lead to the overall development of the nearby areas through employment generation, improved standard of living, revenue to the state in the form of royalty, improved transport facilities etc.;

4. The proposed allocated budget for the cluster is approximately Rs. 12.5 Lakhs per annum. This will be spent on various labour welfare programmes such as regular health check-ups, provision of sanitation facilities, drinking water, crèches, etc.

5. The project proponents will also contribute through Corporate Environmental Responsibility, of approx budget of Rs. 21 Lakhs.

9. Environmental Management Plan

1. Approximately Rs. 21 Lakhs per annum will be spent on various activities for Environment Management Plan such as dust suppression, environmental monitoring, plantation and reclamation purposes

2. Approx. Rs. 20.5 Lakhs per annum will be spent on various activities as Corporate Environment Responsibility.

10. Conclusion

The mining operations will meet the compliance requirements of MoEF&CC. Community will have beneficial impacts, as the proposed cluster will generate significant economic benefits for the region. Adoption of best available technology and best management practices along with environment friendly process and with the effective implementation of the Environment Management Plan during the mining activities. The proposed cluster can proceed without any significant negative impact on environment.