

**EXECUTIVE SUMMARY OF
ENVIRONMENTAL IMPACT ASSESSMENT /
ENVIRONMENT MANAGEMENT PLAN
(AS PER EIA NOTIFICATION 2006)**

Kachurwahi Manganese Mine

Area 6.71 Ha, Khasra Nos.: 359, 360, 367 & 381
Village Kachurwahi, Tehsil Ramtek, District Nagpur, Maharashtra
Proposed Production Capacity 5500 TPA for the first five year and then
@ 25000 MTPA for balance period by U/G Method

Submission for
Public Hearing
To
Maharashtra Pollution Control Board

PROJECT PROPONENT
M/s. Veet Rag Homes Private Limited
20, IT park Parsodi, Nagpur

EIA Consultant
POLLUTION AND ECOLOGY CONTROL SERVICES
Accredited by NABET vide certificate No. NABET/EIA/1617/RA0044, Dated 28.03.2017

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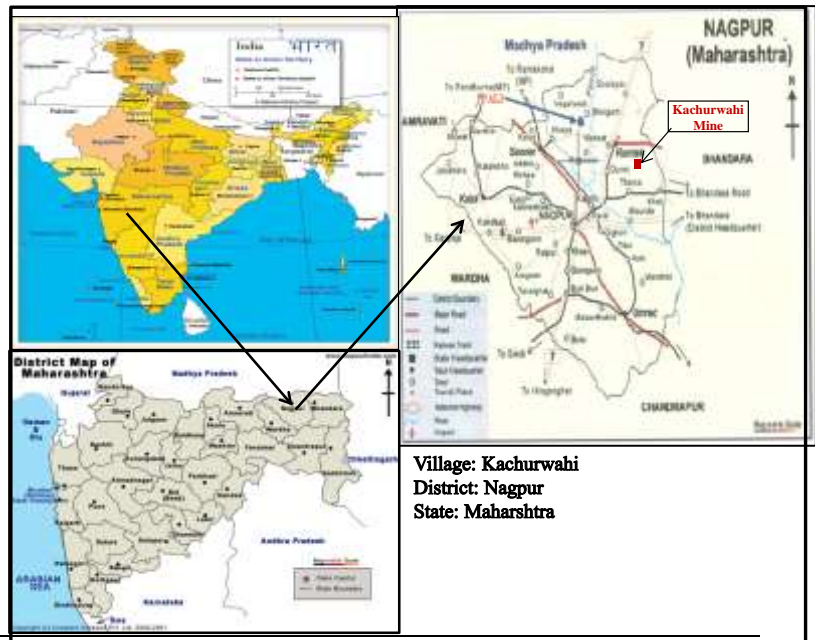
EXECUTIVE SUMMARY

INTRODUCTION: M/s. Veet rag Homes Private Limited has granted manganese mine located at Village –Kachurwahi, Tahsil-Ramtek, District-Nagpur, Maharashtra. It is proposed to production capacity of manganese 5,500 TPA for first five years and then @ 25000 MTPA for the balance period as per approved mine plan from the allocated ML area of 6.71 Ha in order to cater the overgrowing need for manganese ore in the market. The proposed production will be achieved by developing this mining lease area by mechanized underground method. For this purpose Mining Plan has been approved by IBM..

An application for obtaining Environmental Clearance was made to the SEAC in accordance with the Notification of MoEF&CC S.O. 1533 dated 14.09.2006. Accordingly, the project was appraised by State Expert Appraisal Committee in its 134th meeting held on 7th, 8th & 9th September 2016 for determining Terms of Reference (TOR) for undertaking EIA study. The present summary is extracted from draft EIA/EMP report which is based on this TOR.

Location Details: The M.L. area over 6.71 hectares is covered within the Survey of India Toposheet No. 55 O/7 on a scale of 1:50,000 and is bounded by the latitude 21^o 19' 50' and longitude 79^o 23' 48.30" E.

Accessibility - The area can be approached from Nagpur by NH-7 upto Munsar. The mine is at the distance of 12 km from Ramtek. The nearest Railway station is Ramtek which is about 12 km.



Landuse – The mine lease area is private land as per Government record. The proposed production will be achieved from the 6.71 Ha mining lease.

Geological formations & Ore Reserves: The regional geology of the area is represented by Sitasaongi and Mansar rock. The rock outcrops of Sitasaongi formations mostly covered with soil in the area. Whereas the Mansar formations of rocks are clearly visible in the mine workings. The total geological reserves of manganese are estimated to be 495915 Tonnes, whereas the mineable reserves are 316202 Tonnes.

Mining Method: The mining will be mechanized 'Underground' method of mining. Initially all the openings i.e. Vertical Shaft, and all the winzes will be utilised for production. Once the Pit Bottom Layout of Vertical Circular Shaft is made available the entire output including that of waste rock if any will be hoisted through the subject Circular Shaft. Lifting of ore to surface by shaft, sorting and sizing of ore would be carried out manually.

Drilling & Blasting: The drilling using jack hammer drills and controlled for blasting would be carried out using delay detonators.

The mining operations will be starting after obtaining necessary permissions from these areas. With the present mineable reserves i.e., 1316202 Tonnes and proposed production as per approved mine plan the anticipated life of the mine is approximately 18 years.

Transport of Mineral- Material will be transported mostly by road from the mine to the consumer industries as it is economical and speedy for short distances.

Waste Generation and Management: The development consists of removal of an overburden, which occurs as a capping over manganese. It is

anticipated that about 6600 m³ of waste will be generated during the first period of five years.

The waste and rejects will be dumped in non mineralized zone within the mining lease. Dumps after stabilization will be biologically reclaimed. There is no proposal for storage of overburden outside the mining lease area.

Drainage: There is no stream crossing through lease area. However, in the buffer zone there is Sur Nadi at 2.0 Km in NE direction and Khindsi Lake at 6 km in north direction. The mining lease area is a more or less plain terrain gently sloping. The general slope of the surrounding area is towards south-east direction.

Ground water: The proposed excavations are not going to touch the ground water table. Thus, there will not be any contamination of the underground water because of this mining. The water requirement for the mine will be met from the bore well / dug well. There will be no discharge of waste water from the mine.

Arrangement for Dewatering: Water requirement for dust suppression, plantation and vehicle washing will be met from rainwater collected in mining pit.

Employment Potential: Around 95 Staff & workers will be required initially for this mine. This requirement will be further increase to 272 once the mine achieves a production of 25000 MTPA. It is proposed to deploy local manpower meeting the eligibility criteria required for the job under consideration.

Resuming of industrial activity like mining will benefit people residing in the nearby villages within the buffer zone by direct and indirect employment opportunities. People will also be beneficiaries for the facilities developed due to mining activity.

BASELINE ENVIRONMENTAL STATUS:

The total project area (6.71 Ha) of the **Kachurwahi Manganese Mine** is considered as Core Zone while the 10 Km surrounding area of core zone is considered as Buffer Zone. Baseline environmental data was collected for all the components of environment like meteorology, air, water, noise, soil, geology, hydrogeology, flora-fauna, demographic and socio-economics, industries, places of archeological and historical importance etc. Standard guidelines prescribed by Ministry of Environment & Forests and Central Pollution Control Board were used for this study. The EIA report incorporates the baseline data generated through primary surveys for three months during October 2016 to January 2017 representing post monsoon season.

Landuse of the Buffer Zone: As per census the total area estimated within 10 km radius of buffer zone (study area) around mine was 31400 Ha. The area under forest is reported to be 24.56% followed by area under cultivation/agricultural 60.13% (irrigated 41.99% and un-irrigated 18.14%). The area under culturable waste land was 4.72% and area not available for cultivation was 10.59%.

Water Quality: Total 3 surface & 3 ground water sampling stations were monitored in the study area. The analysis indicates that almost all parameters are within the prescribed limit.

Air Quality: The monitoring was carried out for 13 continuous weeks beginning from October 2016 and January 2017 as per norms stipulated by the Central Pollution Control Board. To assess the baseline ambient quality eight air quality monitoring location were selected on the basis of wind direction and other meteorological parameters in core and buffer zone area.

The PM₁₀ PM_{2.5} SO₂, NO_x values for all 8 stations were below.

- **Particulate Matter₁₀**: The 24 Hourly concentration of PM₁₀ reported during the survey ranged from 49.6 to 56.7 µg/m³. This is lower than the NAAQ permissible level of 100 µg/m³.
- **Particulate Matter_{2.5}**: The 24 Hourly concentration of PM_{2.5} reported during the survey ranged from 10.9 to 14.4 µg/m³. This is *much* lower than the NAAQ permissible level of 60 µg/m³.
- **SO₂**: The 24 Hourly concentration of SO₂ reported during the survey ranged from 7.9 to 10.8 µg/m³. This is lower than than the NAAQ permissible level of 80 µg/m³.
- **NO_x**: The 24 Hourly concentration of NO_x reported during the survey ranged from 9.9 to 11.9 µg/m³. This is lower than the NAAQ permissible level of 80 µg/m³.

Noise Levels: A noise survey for baseline levels of noise indicates that noise levels are in the range of 32.1 – 56.0 dB dBA at 8 studied stations. These are well within prescribed limit for residential area.

Soil Quality: Soil samples were collected at 2 selected locations in the study area to assess the existing soil conditions around the mine. Overall soils are moderately suitable for cultivation of arable crops and have moderate fertility.

Biological Environment: The core and buffer zones include the village settlements with their cultivated fields, forest areas as well as vast areas reduced to wasteland. The detailed inventory of floral and faunal assemblage of the core and buffer zone has been prepared. The details of flora and fauna are provided in EIA/EMP. There are no ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the buffer zone.

Human Settlement and Demography: The area selected for the study constitutes 48 inhabited villages. The population is distributed among 14513 households in the study area. The 48 inhabited villages have a population of 64066 comprising of 32726 males and 31340 females. The number of females per 1000 males is 962. The overall literacy in the villages of the study area has 70.16%.

Proposed Social Responsibility Measures : A systematic approach for the implementation of the peripheral area development in selected villages in the buffer zone starting from the nearest village will be drawn up with the help of local community based organization & in consultation with the villagers. Assistance in the field of health and sanitation, environment conservation, water conservation, literacy, self help groups, development of infrastructure. A budgetary provision of Rs 5 lakhs per annum as annual recurring expenses is proposed on this account.

Risk Assessment & Disaster Management Plan: In any mining project, work safety is taken care of as per provisions in the Mines Act, Rules framed there under. Inundation, controlled blasting operations, risks associated with handling and use of explosives, during operations of equipment and movement of vehicles has been dealt. The risk management plan as per the directives of competent authorities will be Implemented strictly.

ENVIRONMENT MANGEMENT PLAN

Air Pollution Management :

- a) Internal roads will be frequently sprinkled with water for which truck mounted water tankers with sprinkler arrangement have been provided.
- b) Ore will be covered by tarpaulins to prevent spread of dust from it during transportation.
- c) Regular maintenance of vehicles and machineries will be carried out in order to control emissions.
- d) Green belt development will be taken up at various places.
- e) The dust respirators will be provided to all the workers.
- f) Good housekeeping and proper maintenance will be practiced which will help in controlling the pollution.

Water Pollution Management: During underground mining operation the water encountered shall be collected in the main underground sumps and then pump to surface. This pumped out water shall be treated in settling tanks. Part of this water shall be utilized for dust suppression and plantation and the excess water shall be discharge to the natural water courses.

Noise & Vibration Management

- Noise is best abated at source by choosing machinery and equipment suitably, by proper mounting of equipment & ventilation systems and by providing noise insulating enclosures or padding where practicable.
- Proper maintenance of vehicles will be done which keeps the noise level within limits.
- At the boundary of mining lease green belt of local trees will be planted which will act as acoustic barriers. Planting of bushy trees of rich canopy in and around the mine area to intercept noise transmission. A 7.5 m wide belt of

trees of different heights will be useful to act as noise attenuator in the mining areas.

- Delay detonators millisecond delay interval will be used. For keeping the vibrations minimum.

Land Reclamation Measures: The mining will be by underground method of mining. The ore reserves will last long even after the ML period expires , the same will be renewed for further period, hence question of back filling /reclamation does not arise at this stage. However it is proposed to carryout plantation in the non mineralized area on regular basis.

Plantation: It is proposed to select the local tree species with the help of forest department having 3 tier arrangements for implementation all along the mining lease in order to control dispersion of fugitive dust from the mining lease. Total green belt & plantation will be carried out on 4.0 ha area till the end of life of mine. The plantation shall be done @ approximately 2500 trees per ha of land.

The mitigation measures suggested above shall be implemented so as to reduce the impact on environment due to operations of proposed mining activities. In order to facilitate easy implementation, mitigation measures are phased as per the priority implementation. A separate budgetary allocation of the funds is made for the environmental protection measures. The monitoring of the pollution to know the effectiveness of the applied control measures will be carried out at regular interval. A budgetary provision of Rs. 5 lakhs as annual recurring expenditure is made in the management.

AN EPILOGUE

In compliance with the environmental procedure the environmental clearance application is made. Necessary scientific studies have been undertaken as per the guidelines set by the Ministry of Environment, Forests & Climate Change (MoEF&CC). The suggestions/recommendations of all the experts, competent authorities, and government officials are being sought for the impacts of the proposed project. Views and guidance of the local residents, community based organizations, social organizations are extremely important in order to devise a full proof Environment Management Plan for the proposed mining project and also mitigate the damages caused due to the project. Allocation of necessary funds, manpower and machinery will be made to for the protection and conservation of all the components of environment. It is ensured that all mandatory clearances will be sought from respective competent authorities before operating the proposed **Kachurwahi Manganese Mine** (area 6.71Ha). We at **M/s. Veet Rag Homes Private Limited** are committed to implement the suggestions for the improvement of the environment and assure that every attempt will be made for the conservation and protection of the natural resources to the maximum extent.