

State Environment Impact Assessment Authority, M.P.
(Government of India, Ministry of Environment & Forests)

Research and Development Wing

Madhya Pradesh Pollution Control Board
Paryavaran Parisar, E-5. Arera Colony
Bhopal-4620 16

visit us <http://www.mpseiaa.nic.in>

Tel:0755-2466970, 2466859

Fax : 0755-2462136

No: 847 / EPCO-SEIAA /11

Date: 15.12.2011

To,
Shri J. K. Singh
M/S Shivalika Minerals
72, 1st Floor, Adita Avenue Building,
Zone-II, M. P. Nagar,
Bhopal, M. P.
Phone No. 0755-5273629

Sub: Case no. 111/2008, Prior Environmental Clearance for Manganese mine in an area of 8.0 ha for 0.05 million MT/year capacity at village Mansakhra, Tehsil Sihora, Distt. Jabalpur, M. P.

This has reference to your letter No. Nil dtd. Nil received in SEIAA office on 10.06.2008 and subsequent letters seeking Prior Environmental Clearance for the above project under the EIA Notification, 2006. The proposal has been appraised as per prescribed procedure in the light of provisions under the EIA Notification, 2006 on the basis of the mandatory documents enclosed with the application viz., the Form I, Pre-Feasibility Report, ToR and subsequently submission of EIA, Public Hearing and the additional clarifications furnished in response to the observations of the State Expert Appraisal Committee (SEAC) and State Environment Impact Assessment Authority (SEIAA) constituted by the competent Authority.

2. It has been noted that the proposal is for manganese mining for an area of 8.0 ha. The mining lease area is located in Khasra No. 199 at village Mansakhra, Tehsil Sihora, Distt. Jabalpur, M. P. It lies at latitude 23^o 29' 47" to 23 29' 58" N and longitude 80^o 07' 10" to 80^o 07' 26" E at an attitude of 400 - 426 m MSL. It is government revenue land. The Bandhawagarh National Park is 25.0 km from the mining lease area while that of nearest forest boundary is more than 5.0 km.

The total production capacity is 0.05 million TPA. The mining lease period is for 20 years. The anticipated life of the mine is 18 years. The mining will be carried out by open cast manual drilling method. The average mRL would be in the range of 4226-400 AMSL. The total mineable reserves are 9,00,000 Tonnes. The water requirement will be 10 m³/day which will be mainly for drinking water, dust suppression and plantation. The source of water will be sump and ground water through tankers. Mining solid waste of about 4,00,000 Cum m will be generated at the end of lease period. An area of 5.0 ha shall be covered under plantation. The public hearing was conducted on 01.04.2010.

3. The project has been considered in accordance with the provisions of the EIA notification issued by the Ministry of Environment & Forests vide S.O. 1533 (E), dated September 14, 2006.

4. Based on the information submitted by you, as at Para 2 above and others, the State Level Environment Impact Assessment Authority (SEIAA) considered the case in its 72nd meeting held on 16.11.11 and decided to accept the recommendations of 80th SEAC meeting held on 03.09.11 and 76th SEAC meeting dtd. 07.01.11. Hence Prior

Environmental Clearance is accorded to the above project under the provisions of EIA notification dtd. September 14, 2006, subject to the compliance of the following Specific and General conditions.

A. Specific conditions

- (i) No two pits shall be simultaneously worked i.e before the first is exhausted and reclamation work completed, no mineral bearing area shall be worked.
- (ii) After exhausting the first mine pit and before starting mining operations in the next pit, reclamation and plantation works in the exhausted pit shall be completed so as to ensure that reclamation, forest cover and vegetation are visible during the first year of mining operations in the next pit. This process will follow till the last pit is exhausted. Adequate rehabilitation of mined pit shall be completed before any new ore bearing area is worked for expansion.
- (iii) Adequate buffer zone shall be maintained between two consecutive mineral bearing deposits.
- (iv) Sprinkling of water on haul roads to control dust will be ensured by the project proponent.
- (v) Minimum 1000 plants shall be planted in one year and 5000 plants shall be planted in first five years.
- (vi) By the end of the lease period 33% of the area should be brought under plantation.
- (vii) Green belt development shall be carried out considering CPCB guidelines including selection of plant species and in consultation with the local DFO / Agriculture Department. Herbs and shrubs shall also form a part of afforestation programme besides tree plantation. The company shall involve local people for plantation programme. Details of year wise afforestation programme including rehabilitation of mined out area *shall be submitted* to the Regional Office, MoEF, GoI, Bhopal every year.
- (viii) Blast vibrations study shall be conducted and submitted to the Regional office, MoEF, GoI, Bhopal **within six months**. The study shall also provide measures for prevention of blasting associated impact on nearby houses and agricultural fields.
- (ix) Controlled blasting techniques with sequential blasting shall be adopted. The blasting shall be carried out in the day time only.
- (x) Maintenance of village roads through which transportation of minerals are undertaken shall be carried out by the company regularly at its own expenses. The roads shall be black topped.
- (xi) Rain water harvesting shall be undertaken to recharge the ground water source. Status of implementation shall be submitted to the Regional Office, MoEF, GoI, Bhopal **within six months** and thereafter every year from the next consequent year.
- (xii) Measures for prevention and control of soil erosion and management of silt shall be undertaken. Protection of dumps against erosion shall be carried out with geo textile matting or other suitable material, and thick plantations of native trees and shrubs shall be carried out at the dump slopes. Dumps shall be protected by retaining walls.
- (xiii) Trenches / garland drains shall be constructed at foot of dumps and coco filters installed at regular intervals to arrest silt from being carried to water bodies. Adequate number of Check Dams and Gully Plugs shall be constructed across seasonal/perennial nallahs, if any flowing through the ML area and silts arrested. De-silting at regular intervals shall be carried out.
- (xiv) Garland drain of appropriate size, gradient and length shall be constructed for both mine pit and for waste dump and sump capacity shall be designed keeping 50%

safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and de-silted at regular intervals.

- (xv) Ground and surface water, if any in and near the core zone (within 5.0 km of the lease) shall be regularly monitored for contamination and depletion due to mining activity and **records maintained**. *The monitoring data shall be submitted to the Regional Office, MoEF, Gol, Bhopal regularly.* Further, monitoring points shall be located between the mine and drainage in the direction of flow of ground water shall be set up and records maintained.
- (xvi) Fugitive dust generation shall be controlled. Fugitive dust emission shall be regularly monitored at locations of nearest human habitation (including schools and other public amenities located nearest to sources of dust generation as applicable) and **records submitted** to the Regional Office, MoEF, Gol, Bhopal regularly.
- (xvii) Baseline data for air quality shall be maintained and RSPM level in air quality in the nearby human habitation (villages) shall also be monitored along with other parameters.
- (xviii) Transportation of minerals shall be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of mineral/dust take place.
- (xix) Occupational health and safety measures for the workers including identification of work related health hazards, training on malaria eradication, HIV, and health effects on exposure to mineral dust etc. shall be carried out. Periodic monitoring for exposure to respirable mineral dust on the workers shall be conducted and records maintained including health records of the workers. Awareness programme for workers on impact of mining on their health and precautionary measures like use of personal equipments etc. shall be carried out periodically. Review of impact of various health measures shall be conducted followed by follow up action wherever required.
- (xx) The project proponent will ensure proponent to local people as per requirements, necessary protection measures around the mine pit and waste dumps garland drain around the mine pit and waste dump.
- (xxi) Top soil / solid waste shall be stacked properly with proper slope and adequate safeguards and shall be utilized for backfilling (wherever applicable) for reclamation and rehabilitation of mined out area. Top soil shall be separately stacked for utilization later for reclamation and shall not be stacked along with over burden.
- (xxii) Over burden (OB) shall be stacked at earmarked dump site(s) only and shall not be kept active for long period. The maximum height of the dump shall not exceed 20 m, each stage shall preferably be of maximum 10 m and overall slope of the dump shall not exceed 35°. The OB dump shall be backfilled. The OB dumps shall be scientifically vegetated with suitable native species to prevent erosion and surface run off.

Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Regional Office, Ministry of Environment & Forests, Gol, Bhopal on six monthly basis.

- (xxiii) Slope of the mining bench and ultimate pit limit shall be as per the mining scheme approved by Indian Bureau of Mines.
- (xxiv) Regular monitoring of ground and surface water sources for level and quality shall be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring shall be carried out four times in a year i.e. pre-monsoon (April-May), monsoon (August), post-monsoon

(November) and winter (January) and the data thus collected shall be regularly sent to MoEF, Central Ground Water Authority and Regional Director, Central Ground Water Board.

- (xxv) Project Proponent shall ensure appropriate arrangement for shelter and drinking water for the mine workers.
- (xxvi) The waste water from the mine shall be treated to conform to the prescribed standards before discharging in to the natural stream. The discharged water from the Tailing Dam, if any shall be regularly monitored and report submitted to the Regional Office, Ministry of Environment & Forests, Gol, Bhopal, Central Pollution Control Board and the State Pollution Control Board.
- (xxvii) Hydro-geological study of the area shall be reviewed by the project proponent annually. In case adverse effect on ground water quality and quantity is observed mining shall be stopped and resumed only after mitigating steps to contain any adverse impact on ground water is implemented.
- (xxviii) Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transportation of minerals and others shall have valid permissions as prescribed under Central Motor Vehicle Rules, 1989 and its amendments. The vehicles transporting minerals shall be covered with a tarpaulin or other suitable enclosures so that no dust particles / fine matters escape during the course of transportation. No overloading of minerals for transportation shall be committed. The trucks transporting minerals shall not pass through wild life sanctuary, if any in the study area.
- (xxix) Prior permission from the Competent Authority shall be obtained for extraction of ground water, if any.
- (xxx) A final mine closure plan, along with details of Corpus Fund, shall be submitted to the Regional office, Ministry of Environment & Forests, Gol, Bhopal 5 years in advance of final mine closure for approval.
- (xxxi) Project Proponent shall explore the possibility of using solar energy where ever possible.
- (xxxii) Commitment towards CSR have to be followed strictly.
- (xxxiii) Regular health check-up record of the mine workers has to be maintained at site in a proper register. It should be made available for inspection whenever asked.
- (xxxiv) Project Proponent has to strictly follow the direction/guidelines issued by MoEF, CPCB and other Govt. Agencies from time to time.

B. General conditions

- (i) Any addition of the mining area, change of Khasra numbers, enhancement of capacity, change in mining technology, modernization and scope of working shall again required prior environmental clearance as per EIA notification, 2006.
- (ii) No change in the calendar plan including excavation, quantum of mineral and waste shall be made.
- (iii) Mining will be carried out as per the approved mining plan. In case of any violation of mining plan, the Environmental Clearance given by SEIAA will stand cancelled.
- (iv) Four ambient air quality-monitoring stations shall be established in the core zone as well as in the buffer zone for RSPM, SPM, SO₂, NO_x monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board. The monitored data for

criteria pollutants shall be regularly up loaded on the company's website and also displayed at website.

- (v) Data on ambient air quality (RPM, SPM, SO₂, NO_x) should be regularly submitted to the Regional office, MoEF, GoI, Bhopal and the State Pollution Control Board / Central Pollution Control Board once in six months.
- (vi) Ambient air quality at the boundary of the mine premises shall conform to the norms prescribed in MoEF notification no. GSR/826(E) dtd. 16.11.09.
- (vii) Fugitive dust emissions from all the sources shall be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points shall be provided and properly maintained.
- (viii) Measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. shall be provided with ear plugs / muffs and health records of the workers shall be maintained.
- (ix) Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap shall be installed before discharge of workshop effluents.
- (x) Personnel working in dusty areas shall be provided with protective respiratory devices and they shall also be imparted adequate training and information on safety and health aspects.
- (xi) Special measures shall be adopted to prevent the nearby settlements from the impacts of mining activities.
- (xii) The transportation of the materials shall be limited to day hours time only.
- (xiii) Provision shall be made for the housing the labourers within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- (xiv) A separate Environmental Management Cell with suitable qualified personnel shall be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.
- (xv) The Project Proponent shall inform to the Regional Office, MoEF, GoI, Bhopal regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (xvi) The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year wise expenditure shall be reported to the MoEF, GoI, and its Regional Office located at Bhopal.
- (xvii) The Regional Office, MoEF, GoI, Bhopal shall monitor compliance of the stipulated conditions. A complete set a documents including Environment Impact Assessment Report, Environmental Management Plan, Public hearing and other documents information should be given to Regional Office of the MoEF, GoI at Bhopal.
- (xviii) A copy of the environmental clearance shall be submitted by the Project Proponent to the Heads of the Local Bodies, Panchayat and Municipal Bodies as applicable in addition to the relevant officers of the Government who in turn has to display the same for 30 days from the date of receipt.
- (xix) The Project Proponent shall advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with

the State Pollution Control Board and also at web site of the State Level Environment Impact Assessment Authority (SEIAA) website at www.mpseiaa.nic.in and a copy of the same shall be forwarded to the Regional Office, MoEF, Gol, Bhopal.

- (xx) The project proponent has to strictly follow directions/guideline issued by the MoEF, Gol, CPCB and other Govt. agencies from time to time.
- (xxi) Action plan with respect to suggestion/improvement and recommendations made and agreed during public hearing consultation shall be submitted to the Regional office of the MoEF, Bhopal and to the competent authority of the State Government within six months.
- (xxii) The Project Proponent has to submit half yearly compliance report of the stipulated prior environmental clearance terms and conditions in hard and soft copy to the Regulatory Authority on 1st June and 1st December of each calendar year.
5. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
6. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
7. Any appeal against this prior environmental clearance shall lie with the Green Tribunal, if necessary, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
8. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with amendments and rules.

Sd/-
(Manohar Dubey)
Member Secretary

Endt No. 848 / EPCO - SEIAA/11 Dated: 15.12.2011

Copy to:-

1. Principal Secretary, Department of Environment, Government of Madhya Pradesh, Mantralaya, Bhopal.
2. Chairman, State Environment Impact Assessment Authority, Research and Development Wing Madhya Pradesh Pollution Control Board, Paryavaran Parisar, E-5. Arera Colony Bhopal-4620 16
3. Member Secretary, SEAC, Research and Development Wing Madhya Pradesh Pollution Control Board, Paryavaran Parisar, E-5. Arera Colony Bhopal-4620 16
4. Member Secretary, Madhya Pradesh Pollution Control Board, Paryavaran Parisar, E-5, Arera Colony, Bhopal-462016
5. Collector, Distt-Jabalpur-M.P.
6. Divisional Forest Officer, Distt. Jabalpur, M. P.
7. Division, Monitoring Cell, MoEF, Gol, Paryavaran Bhawan, CGO Complex, Lodhi Road, New Delhi- 110 003
8. Regional Officer, Regional Office of the Ministry of Environment & Forest, Gol, Near Arera Petrol Pump, Arera Colony, Bhopal.
9. District Mining Officer, Distt. Jabalpur, M. P.
10. Guard file

Sd/-
(Dr R P Singh)
Officer-in-Charge