



No. J-11015/380/2006-IA.II(M)  
Government of India  
Ministry of Environment & Forests

Paryavaran Bhavan,  
C.G.O. Complex, Lodi Road,  
New Delhi-110003.

Dated the 2<sup>nd</sup> July, 2008

To

M/s Geetarani Mohanty  
Station Road, Barbil,  
Keonjhar,  
ORISSA-758 035  
E: mail: [sahoo\\_ore@yahoo.co.in](mailto:sahoo_ore@yahoo.co.in)

**Subject: Expansion of Raikela Iron Ore Mining Project of M/s Geetarani Mohanty located in Village Raikela, Tehsil Bonai, District Sunderarh, Orissa-environmental clearance reg.**

Sir,

This has reference to your letter No. 231/GRM/MoEF/05-06 dated 17.03.2006 and subsequent letters dated 05.12.2006, 27.07.2007, 15.10.2007, 17.12.2007, 23.03.2008 and 02.04.2008 on the subject mentioned above. The proposal is for enhancement of production of iron ore from 0.142 million tonnes per annum (million TPA) to 0.864million TPA. The total mine lease area of the project is 67.586ha, out of which 66.671ha is forestland and 0.915ha is others (Sarba Sadharana). Area proposed for mining is 50.893ha, an area of 3ha is kept for over burden dump, 4.568ha for mineral storage, 0.2ha for infrastructure, 2.985ha for roads, 2.603ha for green belt, 2.422ha for mineral separation plant and 0.915ha is others. It has been proposed that the Sarba Sadharana land of 0.915ha will not be acquired. The Suna Nallah is located at a distance of 1km toward North West boundary of mine lease area. The Karo River is reported to be located at a distance of 7.5km in South West of the mine lease. No national park/wildlife sanctuary/biosphere reserve/tiger reserve/elephant reserve etc. is reported to be located in the core and buffer zone of the mine and that the area does not report to form corridor for Schedule-I fauna. In support of this, the project proponent has furnished a map duly authenticated by DFO and Wildlife Warden, Boani Division. The Torha RF and Amrohi RF are in the buffer zone of the mine. The mine working will be opencast by semi-mechanised method involving drilling and blasting. The targetted production capacity of the mine is 0.864million TPA of iron ore and life of mine is 15years. Approximately 3000TPD of mineral will be transported through road. Mineral beneficiation is not a part of the project; however, sizing and screening of the ore will be carried out in the lease area. The topography of the area is hilly at an

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elevation ranging from 300m-840m AMSL. The ultimate working depth of mine will be 658m RL. The ground water table reported to prevail at 670m RL and the mine working will, therefore, go beyond water table. The water requirement of the project is estimated as 64.5m<sup>3</sup> per day, out of which 14m<sup>3</sup> per day will be sourced from the groundwater and remaining 50.5m<sup>3</sup> per day will be met from the surface water. One revenue village namely Raikela, having no population is in the core zone of the mine, however, no displacement of population and R&R is involved. Approximately 16,000m<sup>3</sup> per month of solid waste comprising 12,000m<sup>3</sup> per month of over burden (ferruginous laterite) 4,000m<sup>3</sup> per month of sub grade ore will be generated, which will be stacked in the earmarked areas. It is estimated that 21,44,567m<sup>3</sup> of waste will be generated during the mine life, out of which 8,17,002m<sup>3</sup> will be disposed off in the form of external dump and 13,27,565m<sup>3</sup> will be backfilled in 7ha of mined out area. Plantation will be raised in an area of 20.276ha at the end of the mine life. The public hearing of the project was held on 20.10.2005. The consent to establish from the State Pollution Control Board, Orissa obtained on 31.01.2006 for production of 72000TPM of iron ore involving lease area of 64.068ha. The Indian Bureau of Mines had approved scheme of mining along with the progressive mine closure plan of the project on 17.02.2005 for lease area of 67.586ha. The capital cost of the project is Rs.981.4Lakhs.

2. The Ministry of Environment and Forests has examined the application in accordance with Section 12 of the EIA Notification, 2006 read with para 1.2 of the Circular No. J-11013/41/2006-IA.II(I) dated 13.10.2006 and hereby accords environmental clearance under the provisions thereof to the above mentioned Raikela Iron Ore Mining Project of M/s Geetarani Mohanty for an annual production capacity of 0.864million tonnes of iron ore(ROM) by opencast semi-mechanized method involving mining lease area of 67.586ha, subject to implementation of the following conditions and environmental safeguards.

#### A. Specific conditions

- (i) All the conditions stipulated by the State Pollution Control Board, Orissa in their consent to establish shall be effectively implemented.
- (ii) Necessary forestry clearance under the Forest (Conservation) Act, 1980 for an area of 66.671ha is forestland shall be obtained before starting mining operation in that area. Environmental clearance is subject to grant of forestry clearance.
- (iii) The mining operations shall be restricted to 2m above the reported water table i.e. 672m RL and it should not intersect groundwater table.

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In case of working below ground water table, prior approval of the Ministry of Environment and Forests and Central Ground Water Authority shall be obtained, for which a detailed hydro-geological study shall be carried out.

- (iv) The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations.
- (v) The top soil, if any, shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for a period more than 3 years. The topsoil shall be used for land reclamation and plantation.
- (vi) The over burden (OB) generated during the mining operation shall be stacked at earmarked dump site(s) only and should not be kept active for long period of time. Proper terracing of OB dump shall be carried out so that the overall slope shall not exceed 28 degree. Out of the total 21,44,567m<sup>3</sup> of waste to be generated during the mine life, 8,17,002m<sup>3</sup> shall be disposed off in the form of external dump and 13,27,565m<sup>3</sup> shall be backfilled in 7ha of mined out area. The backfilled area shall be afforested. The over burden dumps shall be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the dumps. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis.
- (vii) Catch drains and siltation ponds of appropriate size shall be constructed around the working pit(s), mineral and OB dumps to prevent run off of water and flow of sediments directly into the Suna Nallah, Karo nallah, rivers and water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted particularly after monsoon and maintained properly.

Garland drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and temporary over burden dumps to prevent run off of water and flow of sediments directly into the Suna Nallah, Karo nallah, rivers and water bodies and sump capacity should 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 should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.

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- (viii) Dimension of the retaining wall at the toe of over burden dump and over burden benches within the mine to check run-off and siltation shall be based on the rain fall data.
- (ix) Plantation shall be raised in an area of 20.276ha including a 7.5m wide green belt in the safety zone around the mining lease, backfilled area, quarry benches, roads etc. by planting the native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per ha.
- (x) Regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of SPM and RPM such as around crushing and screening plant, loading and unloading point and transfer points. Extensive water sprinkling should be carried out on haul roads. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- (xi) Regular monitoring of water quality upstream and downstream of Suna Nallah and Karo nallah shall be carried out and record of monitoring data should be maintained and submitted to Ministry of Environment and Forests, its Regional Office, Bhubneswar, Central Groundwater Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board.
- (xii) The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.
- (xiii) Regular monitoring of ground water level and quality should be carried out in and around the mine lease by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out four times in a year – pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to Ministry of Environment and Forests and its Regional Office Bhubaneswar, Central Ground Water Authority and Regional Director, Central Ground Water Board.
- (xiv) The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water) for the project.
- (xv) Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with Regional Director, Central Ground Water Board.

- (xvi) Appropriate mitigative measures should be taken to prevent pollution of Karo River in consultation with the State Pollution Control Board.
- (xvii) Minerals handling plant shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These shall be properly maintained and operated.
- (xviii) Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The mineral transportation shall be carried out through covered trucks only and the vehicles carrying the mineral shall not be overloaded.
- (xix) Blasting operation shall be carried out only during the daytime. Controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.
- (xx) Drills shall either be operated with dust extractors or equipped with water injection system.
- (xxi) Consent to operate shall be obtained from the State Pollution Control Board prior to start of enhanced production from the mine.
- (xxii) Sewage treatment plant should be installed for the colony. ETP should also be provided for workshop and wastewater generated during mining operation.
- (xxiii) The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered fauna, if any spotted in the study area and contribute towards the cost of implementation of the plan and/or Regional Wildlife Management Plan for conservation of flora and fauna so prepared by the State Forest and Wildlife Department. The amount so contributed shall be included in the project cost. A copy of action plan may be submitted to the Ministry and its Regional Office, Bhubaneswar within 3 months.
- (xxiv) A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.

#### **B. General conditions**

- (i) No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.



- (ii) No change in the calendar plan including excavation, quantum of mineral iron ore and waste should be made.
- (iii) Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RPM, SPM, SO<sub>2</sub> & NO<sub>x</sub> 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.
- (iv) Data on ambient air quality (RPM, SPM, SO<sub>2</sub> & NO<sub>x</sub>) should be regularly submitted to the Ministry including its Regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.
- (v) Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.
- (vi) Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.
- (vii) 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 19<sup>th</sup> May, 1993 and 31<sup>st</sup> December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.
- (viii) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.

Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.

- (ix) A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.
- (x) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubaneswar.

- (xi) The project authorities should inform to the Regional Office located at Bhubaneswar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (xii) The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.
- (xiii) The project proponent shall submit six monthly report on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Bhubaneswar, Central Pollution Control Board and State Pollution Control Board.
- (xiv) A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.
- (xv) State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office/ Tehsildar's Office for 30 days.
- (xvi) The project authorities should 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 Ministry of Environment and Forests at <http://envfor.nic.in> and a copy of the same should be forwarded to the Regional Office of this Ministry located Bhubaneswar.
3. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
4. 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.
5. 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 their amendments and rules made thereunder and also any other orders passed by any Court of Law relating to the subject matter.



6. Any appeal against this environmental clearance shall lie with the National Environment Appellate Authority, if preferred within a period of 30 days as prescribed under Section 11 of the National Environment Appellate Act, 1997.

  
(SATISH C. GARKOTI)  
Additional Director (S)

**Copy to:**

- (i) The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
- (ii) The Secretary, Department of Environment, Government of Orissa, Secretariat, Bhubaneswar.
- (iii) The Secretary, Department of Mines and Geology, Government of Orissa, Secretariat, Bhubaneswar.
- (iv) The Secretary, Department of Forests, Government of Orissa, Secretariat, Bhubaneswar.
- (v) The Chief Wildlife Warden, Government of Orissa, Bhubaneswar.
- (vi) The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
- (vii) The Chief Conservator of Forests, Regional Office (EZ), Ministry of Environment and Forests, A-3 Chandrashekharapur, Bhubaneswar-751023.
- (viii) The Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118 Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012.
- (ix) The Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- (x) The District Collector, Sundergarh District, Government of Orissa.
- (xi) EI Division, Ministry of Environment & Forests, EI Division, New Delhi.
- (xii) Monitoring File.
- (xiii) Guard File.
- (xiv) Record File.