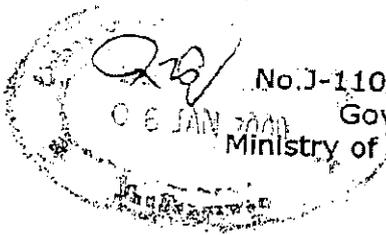


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No.J-11015/1081/2007-IA.II(M)
Government of India
Ministry of Environment and Forests

Paryavaran Bhawan
CGO Complex, Lodi Road,
New Delhi-110 003

Dated the 15th December, 2008

To

M/s Orissa Mining Corporation Limited
OMC House,
P.O. Box-34,
Bhubanswar - 751 001
Orissa
E-mail: info@orissamining.com

Subject: Expansion of Khandbandha Iron Ore Mining Project of M/s Orissa Mining Corporation Limited, located in Village(s) Khandandha, Gurda, Jalahuri, Jaroli & Jajang, Tehsil Barbil, District Keonjhar, Orissa - environmental clearance regarding

Sir,

This has reference to your letter No. 10590/OMC/F&E/2007 dated 15.05.2007 and subsequent letters dated 04.10.2007, 09.07.2008 and 08.08.2008 on the subject mentioned above. The proposal is for renewal of mine lease and enhancement of production of iron ore from 0.2million TPA to 1million TPA. The total mine lease area of the project is 366.311ha, out of which, 19.106ha is an agricultural land, 294.53ha is forestland, 46.231ha is waste land, 2.486ha is grazing land, 0.638ha is roads and 3.32ha is settlements (township). The mine lease area forms part of an un-classed forests. No new township is envisaged. Area proposed for mining is 169.044ha, an area of 9.473ha is kept for infrastructure, 28.359ha for temporary OB dumps, 4.365ha for temporary mineral storage, 10.638ha for roads, 8.88ha for green belt, 3.32ha for township, 16.338ha for magazine and its safety zone and 115.894ha is others (untouched area). The area released by re-handling of OB dump and also mineral storage shall be reclaimed by plantation during post mining stage. The Baitarani River is flowing in the buffer zone of the mine at a distance of 2km from the mine lease boundary. In addition, the Kundra Nallah is also located in the buffer zone of the mine at a distance of 3km from the mine lease boundary. A stretch of one seasonal fourth order stream, admeasuring to 570m, lying in the western side of the lease area will be affected due to expansion of deposit I and deposit V quarry, a diversion channel has been planned. No national park/wildlife sapctuary/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, a duly authenticated map has been provided through the Divisional Forest Officer cum Wild Life Warden, Keonjhar Division. The Karo Kamarda Elephant Corridor is reported to be located at a distance of 11.6km from the mine lease boundary. Six Reserve Forests namely Baitarani RF, Khandabandha RF, Chamakpur RF, Sidhamatha RF, Dandadhuri RF and Mahaparbat RF are located in the buffer zone of the mine at a

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distance of 0.5km, 1km, 3km, 2km, 7.5km and 6.5km respectively from the mine lease boundary. The mine working will be opencast by semi-mechanized method involving drilling and blasting. There is an existing 60TPH crusher and an additional crusher of 110TPH is proposed as a part of this project. The targetted production capacity of the mine is 1million TPA and the life of mine is 7years. Approximately 3350TPD of mineral will be transported through road. The topography of the area is undulated and hilly at an elevation above mean sea level ranging from 525m-677m AMSL. There are six working pits (deposits). The deposit I and deposit V will be merged by 2013. The ultimate working depth of mine, deposit wise will be 585m AMSL in deposit I & deposit V, 596m AMSL in deposit II, 588m AMSL in deposit III, 626m AMSL in deposit IV and 618m AMSL in deposit VI. The groundwater table reported to vary from 544m-548m AMSL. The mine working will not intersect groundwater table. The peak water requirement of the project is estimated 73m³ per day, which will be sourced from the perennial Kundra Nallah. Thirty five households comprising a population of 163people including 154tribals from one Village namely Khandbandh are reported to be located in the core zone of the mine, however displacement of population and R&R has not been envisaged. Approximately 0.2494million m³ of OB has already been accumulated and another 4.518million m³ of OB is proposed to be generated during the expansion phase (mine life). The entire quantity of the waste will be backfilled. The already accumulated waste will be re-handled in the first five years and there will be no external over burden dumps at the end of the mine life. Plantation will be raised in an area of 210.648ha at the end of the mine life and there will be no water body left during the post mining stage. The State Pollution Control Board, Orissa issued Consent to Establish to the project on 26.04.2007 for enhancement of iron ore production from 0.2million TPA to 1million TPA over mine lease area of 366.11ha. The public hearing of the project was held on 08.03.2007 as per EIA Notification, 2006 for enhancement of production of iron ore from 0.02million TPA to 1million TPA over an area of 366.311ha. The Indian Bureau of Mines had approved modified mining plan including progressive mine closure plan of the project on 23.10.2006 for lease area of 366.311ha. The capital cost of the project is Rs.31.95Crores. The capital cost for environmental protection measures is proposed as Rs.301Lakhs and the annual recurring cost towards environmental protection measures is proposed as Rs.33Lakhs.

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 Khandbandh Iron Ore Mining Project of M/s Orissa Mining Corporation Limited for an annual production capacity of 1,000,000tonne(one million tonne) of iron ore by opencast semi-mechanized method involving total lease area of 366.311ha, subject to implementation of the following conditions and environmental safeguards.

[Signature]
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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) The environmental clearance is subject to approval of the State Landuse Department, Government of Orissa for diversion of agricultural land for non-agricultural use.
- (iii) Environmental clearance is subject to grant of forestry clearance. Necessary forestry clearance under the Forest (Conservation) Act, 1980 for an area of 294.53ha forestland involved in the project shall be obtained before starting mining operation in that area. No mining will be undertaken in the forest area without obtaining requisite prior forestry clearance.
- (iv) The project proponent shall develop fodder plots in the non-mineralised area in lieu of use of grazing land.
- (v) The mining operations shall be restricted to above ground water table and it should not intersect groundwater table. 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.
- (vi) The project proponent shall ensure that no natural watercourse and/or water resources are obstructed due to any mining operations. Adequate measures shall be taken while diverting the 570m length 4th order seasonal channels during the course of mining operation.
- (vii) The top soil, if any, shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.
- (viii) The over burden generated shall be stacked temporarily at earmarked dump site(s) only. The existing over burden (OB) shall be re-handled and backfilled. Backfilling has already been in progress and the existing dumps shall be liquidated by 2012. There shall be no external over burden dumps. The entire excavated area shall be backfilled and afforested. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on six monthly basis.
- (ix) Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and temporary OB dumps to prevent run off of water and flow of sediments directly into the Baitarni River, the Kundra Nallah and other water bodies. The water so collected shall be utilized for

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watering the mine area, roads, green belt development etc. The drains shall be regularly desilted, particularly after the monsoon, and maintained properly.

Garland drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed around the mine pit, topsoil dump and temporary over burden dumps to prevent run off of water and flow of sediments directly into the Baitarni River, the Kundra Nallah and other water bodies 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 desilted at regular intervals.

- (x) Dimension of the retaining wall at the toe of temporary OB dumps and the over burden benches within the mine to check run-off and siltation shall be based on the rain fall data.
- (xi) Plantation shall be raised in an area of 210.648ha including a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, quarry benches, around screening plant, 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.
- (xii) Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of SPM and RSPM such as haul road, loading and unloading point and transfer points. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- (xiii) Regular monitoring of water quality upstream and downstream of the Kundra Nallah shall be carried out and record of monitored data should be maintained and submitted to the Ministry of Environment and Forests, its Regional Office, Bhubneswar, the Central Groundwater Authority, the Regional Director, the Central Ground Water Board, the State Pollution Control Board and the Central Pollution Control Board.
- (xiv) 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.
- (xv) Regular monitoring of ground water level and quality shall 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 shall be sent regularly to the Ministry of

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Environment and Forests and its Regional Office, Bhubaneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.

- (xvi) Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.
- (xvii) Appropriate mitigative measures shall be taken to prevent pollution of the Baitarni River in consultation with the State Pollution Control Board.
- (xviii) The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water) required for the project.
- (xix) 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.
- (xx) 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.
- (xxi) Drills shall either be operated with dust extractors or equipped with water injection system.
- (xxii) Mineral handling area 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 should be properly maintained and operated.
- (xxiii) Consent to operate shall be obtained from the State Pollution Control Board prior to start of enhanced production from the mine.
- (xxiv) Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operation.
- (xxv) Digital processing of the entire lease area using remote sensing technique shall be carried out regularly once in three years for monitoring land use pattern and report submitted to the Ministry of Environment and Forests and its Regional Office, Bhubaneswar.
- (xxvi) Land oustees and land losers/affected people, if any, shall be compensated and rehabilitated as per the National Policy on Resettlement and Rehabilitation of project Affected Families.

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- (xxvii) Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.
- (xxviii) Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, 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.
- (xxix) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna namely elephant etc. spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. All the safeguard measures brought out in the Wildlife Conservation Plan so prepared specific to the project site shall be effectively implemented. A copy of action plan shall be submitted to the Ministry of Environment and Forests and its Regional Office, Bhubaneswar.
- (xxx) A Final Mine Closure Plan along with details of Corpus Fund shall 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 minerals iron ore and manganese ore and waste should be made.
- (iii) Atleast four ambient air quality-monitoring stations should 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.
- (iv) Data on ambient air quality (RSPM, SPM, SO₂ & NO_x) 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.

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- (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 19th May, 1993 and 31st 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.

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- (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 website 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 the Hon'ble Supreme Court of India/ High Court of Orissa and any other 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.

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- (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 Chandrashekharpur, 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, Keonhar District, Government of Orissa.
- (xi) EI Division, Ministry of Environment & Forests, EI Division, New Delhi.
- (xii) Monitoring File.
- (xiii) Guard File.
- (xiv) Record File.

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