

By Speed Post**No.J-11015/902/2007-IA.II (M)**

Government of India

Ministry of Environment & Forests

Paryavaran Bhawan,
C.G.O. Complex, Lodi Road,
New Delhi - 110 003Dated the 3rd February, 2012

To

M/s Kaypee Enterprises
Post Box No.3,
P.O. Barbil-758 035,
District Keonjhar,
Orissa.**Sub: Expansion of Thakurani Iron Ore Mining Project of M/s Kaypee Enterprises located in Village Thakurani, Tehsil Barbil, District Keonjhar, Orissa - environmental clearance regarding.**

Sir,

This has reference to your letter No. SGL/BBL/0027/09-10 dated 24.04.2009 and subsequent letters dated 17.06.2009, 27.07.2009, 01.08.2009, 26.08.2009, 22.02.2010 and 17.02.2011 on the subject mentioned above. The project was earlier prescribed Terms of Reference (TORs) by the Ministry of Environment and Forests on 25.06.2008 for undertaking detailed EIA study for the purpose of obtaining environmental clearance. The proposal is for enhancement of production of iron ore from 2.0 million tones per annum (million TPA) to 5.5 million TPA. The project was earlier accorded environmental clearance by the Ministry vide letter No. J-11015/41/2005-IA.II(M) dated 07.10.2005 for production of 2 million TPA of iron ore.

2. The total mine lease area of the project is 228.04 ha, which is forestland. Area proposed for excavation is 104.738 ha, an area of 1.659 ha is kept for storage of top soil, 21.53 ha for over burden dumps, 11.684 ha for stack yard for mineral dressing, 0.025 ha for infrastructure, 7.09 ha for roads, 6.79 ha for safety zone, 3.117 ha is an area reclaimed beyond safety zone and 71.407 ha is area future expansion. The Karo River is reported to be flowing in the buffer zone of the mine at a distance of 8km (West) from the mine lease boundary. There is a first order nallha present in the mine lease, which will be disturbed due to mining.

3. It has been stated that no National Park/ wildlife sanctuary/biosphere reserve/tiger reserve etc. are 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. However, the Singhbhum Elephant Reserve is reported to be located in the buffer zone of the mine at a distance of 3 km North from the mine lease boundary. In support of this the proponent has provided a map showing location of National Park/Sanctuary duly authenticated by DFO cum Wildlife Warden, Keonjhar Division. It was stated that the nearest wildlife corridor is at 17 km. Further, the PCCF, Wildlife vide letter dated 09.08.2010 granted NOC to the said project subject to depositing of funds and implementation of the conservation plan by the user agency. The site specific conservation plan has been approved by PCCF, Wildlife with a total cost of Rs 200lakhs vide letter dated 15.2.2010. Two Reserve Forests namely the Thakurani RF (part of ML) and the Uliburu RF (4 km NW) and two Protected Forests namely, the Pandrasali PF (3km North) and the Noamundi PF (5km NE) are reported to be located in the buffer zone of the mine.

4. The mine working will be opencast by mechanized method involving drilling and blasting. The targeted production capacity of the mine is 5.5 million TPA (ROM) of iron ore and the life of mine is 10 years. Presently, the ore will be transported by covered trucks upto crushing plant and thereafter to railway sidings at a distance of about 4 – 8 kms; however, a railway siding is proposed at Dalki at a distance of about 1 km from the mine lease. After the railway siding is operational, transportation by road will be limited to upto the railway siding only. The topography of the area is hilly and reported to lie between 22°06'15" to 22°08'05" N Latitude and 85°25'35" to 85°26'50" E Longitude in Survey of India topo sheets No. 73 F/8, at an elevation above mean sea level ranging from 585 m – 920 m. The ultimate working depth of mine will be 620 m AMSL. The groundwater table is reported at 460 m AMSL. The mine working will not intersect the groundwater table. The water requirement of the project is estimated as 362m³ per day, which will be obtained from the groundwater. There is no population in the core zone, therefore, displacement of population and R&R has not been envisaged. It is estimated that 4,864,775 m³ of waste will be generated during the life of the mine, out of which 2,541,919 m³ will be backfilled and remaining 2,322,856 m³ will be disposed of in the earmarked areas. Backfilling is proposed from 2011 onwards. There will be four external dumps. The maximum projected height of the dump is 45 m in three stages of 15 m each. Plantation will be raised in an area of 149.518 ha at the end of the mine life and there will be no water body during the post mining stage.

5. The public hearing of the project was held on 09.02.2009 for expansion of production upto 5.5 million TPA over an area of 228.04 ha. The Indian Bureau of Mines had approved scheme of mining along with PMCP of the project on 06.02.2008 over an area of 228.04 ha for the period 2007-08 to 2011-12. The Ministry of Environment and Forests had accorded forestry clearance for diversion of 146.726 ha forestland on 21.07.2005. The Central Ground Water Authority vide letter dated 12.10.2009 granted permission for drawl of groundwater to the extent of 362 m³/day. The capital cost of

the project is Rs.6500 Lakhs and the capital cost for the environmental protection measures is proposed as Rs.170 Lakhs. The annual recurring cost towards the environmental protection measures is proposed as Rs.152 Lakhs. It has been reported that there is no court case relating to the project or related activities.

6. The Ministry of Environment and Forests has examined the application in accordance with the EIA Notification, 2006 and hereby accords environmental clearance under the provisions thereof to the above mentioned Thakurani Iron Ore Mining Project of M/s Kaypee Enterprises for an annual production capacity of 5.5 million tones (ROM) of iron ore, by the opencast mechanized method involving total mine lease area of 228.04 ha, subject to implementation of the following conditions and environmental safeguards.

A. Specific Conditions

- (i) No mining shall be carried out in the forestland involved in the project without obtaining requisite prior forestry clearance under the Forest (Conservation) Act, 1980. The environmental clearance is subject to grant of forestry clearance.
- (ii) The project proponent shall obtain Consent to Establish and Consent to Operate from the State Pollution Control Board, Orissa and effectively implement all the conditions stipulated therein.
- ✓ (iii) Prior environmental clearance from the Standing Committee of the National Board for Wildlife shall be obtained due to location of the mine in the buffer zone of the Singhbhum Elephant Reserve, before starting any activity relating to the project at site. All the conditions stipulated by the Standing Committee shall be effectively implemented in the project. It shall be noted that this clearance does not necessarily implies that wildlife clearance shall be granted to the project and that your proposal for wildlife clearance shall be considered by the competent authorities on its merit and decision taken. The investment made in the project, if any based on environmental clearance granted to the project, in anticipation of the clearance from wildlife clearance shall be entirely at the cost and risk of the project proponent and Ministry of Environment and Forests shall not be responsible in this regard in any manner.
- (iv) Environmental clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No. 460 of 2004, as may be applicable to this project.
- (v) The Company shall submit within 3 months their policy towards Corporate Environment Responsibility which should inter-alia provide for (i) Standard operating process / process to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions, (ii) Hierarchical

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system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions and (iii) System of reporting of non compliances / violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders.

- (vi) The mining operations shall be restricted to above ground water table and it should not intersect the groundwater table. In case of working below the ground water table, prior approval of the Ministry of Environment and Forests and the Central Ground Water Authority shall be obtained, for which a detailed hydro-geological study shall be carried out.
- (vii) The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations. Adequate safeguard measures shall be taken for protection of the first order streams and the seasonal nallahs originating from the mining lease area.
- (viii) 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.
- (ix) The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time and their phase-wise stabilization shall be carried out. Backfilling shall commence from the 11th year onwards. There shall be four external over burden dumps. The maximum projected height of the dumps shall not exceed 45m in three terraces of 15m each and the overall slope of the dumps shall be maintained to 28°. The OB dumps should 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 dump. Monitoring and management of rehabilitated areas shall 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.
- (x) Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, soil, OB and mineral dumps to prevent run off of water and flow of sediments directly into water bodies. The water so collected should be utilized for 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, soil, OB and mineral dumps to prevent run off of water and flow of sediments directly into the

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 shall be constructed at the corners of the garland drains and desilted at regular intervals.

- (xi) Dimension of the retaining wall at the toe of the over burden dumps and the OB benches within the mine to check run-off and siltation shall be based on the rainfall data.
- (xii) Plantation shall be raised in an area of 149.518 ha including a 7.5 m wide green belt in the safety zone around the mining lease, over burden dumps, mine benches, backfilled area, along the 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. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.
- (xiii) Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as around loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- (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 installing new piezometers during the mining operation. The periodic monitoring [(at least four times in a year- pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January); once in each season)] shall be carried out in consultation with the State Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of 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) The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water, if any required for the project.
- (xvii) Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.
- (xviii) Appropriate mitigative measures shall be taken to prevent pollution of the Karo River in consultation with the State Pollution Control Board.
- (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 vehicles shall be covered with a tarpaulin and shall not be overloaded.
- ✓ (xx) No blasting shall be carried out after the sunset. 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) Digital processing of the entire lease area using remote sensing technique should be done regularly once in three years for monitoring land use pattern and report submitted to the Ministry of Environment and Forests and its Regional Office located at Bhubaneswar.
- (xxii) Drills shall either be operated with dust extractors or equipped with water injection system.
- (xxiii) 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.
- (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) 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.

(xxvi) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna namely elephant, sloth bear etc. spotted in the study area. All the safeguard measures brought out in the Wildlife Conservation Plan prepared specific to this project site shall be effectively implemented in consultation with the State Forest and Wildlife Department. A copy of the Conservation plan shall be submitted to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar.

(xxvii) The entire mining lease area shall be fenced by erecting solar powered electric fencing all around it. The fencing so erected shall be maintained properly and the cost towards erection and maintenance of the solar powered electric fencing shall be borne by the project proponent out of the project cost.

✓ (xxviii) No transportation of ore outside the mine lease area shall be carried out after the sunset. Imp

(xxix) 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.

(xxx) The critical parameters such as RSPM (Particulate matter with size less than $10\mu\text{m}$ i.e. PM_{10}) and NO_x in the ambient air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharged water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The Circular No. J-20012/1/2006-IA.II(M) dated 27.05.2009 issued by Ministry of Environment and Forests, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.

(xxxi) 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) Atleast four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10micron i.e., PM₁₀) and 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(Particulate matter with size less than 10micron i.e., PM₁₀) and 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.
- (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 reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.
- (xiv) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.
- (xv) The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the Collector's office/ Tehsildar's Office for 30 days.
- (xvi) The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Office of the Ministry of Environment and Forests, Bhubaneswar by e-mail.

(xvii) The project authorities should advertise at least in two local newspapers of the District or State in which the project is located and 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 at Bhubaneswar.

7. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

8. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.

9. 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 there under 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.

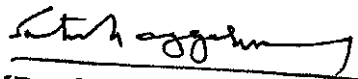


(Dr. S.K. Aggarwal)
Director

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 Chandrashekharpur, Bhubaneswar-751023.
- (viii) The Controller General, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur-440 001.
- (ix) The Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118 Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012.
- (x) The Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- (xi) The District Collector, District Keonjhar, Government of Orissa.
- (xii) EI Division, Ministry of Environment & Forests, EI Division, New Delhi.
- (xiii) Monitoring File.
- (xiv) Guard File.
- (xv) Record File.


(Dr. S.K. Aggarwal)
Director

