

No.J-11015/214/2008-IA.II (M)

Government of India
Ministry of Environment & Forests

Paryavaran Bhawan,
C.G.O. Complex, Lodi Road,
New Delhi - 110 003

Dated the 23rd July, 2009

To

M/s Indrani Patnaik,
A/6, Commercial Estate,
Civil Township,
Rourkela -769 004,
Orissa

Subject: Expansion of Unchaballi Iron Ore and Manganese Ore Mining Project of M/s Indrani Patnaik located in Village(s) Unchaballi & Balda, Tehsil Champua, District Keonjhar, Orissa -environmental clearance regarding.

Sir,

This has reference to your letter No. UBIOM/MoEF/EC/2009/01 dated 23.05.2009 and subsequent letters dated 29.05.2009 and 15.06.2009 on the subject mentioned above. The Ministry of Environment and Forests had earlier prescribed Terms of Reference (TORs) to the project on 25.11.2008 for undertaking detailed EIA study. The proposal is for enhancement of production of iron ore from 0.21million tonnes per annum (million TPA) to 4million TPA. The project was earlier accorded environmental clearance by the Ministry for 0.21million TPA production of iron ore on 05.06.2006. The total mine lease area of the project is 106.1127ha, out of which 2.6607ha is an agriculture land, 103.432ha is forestland and 0.02ha is others. Area proposed for mining is 84.6177ha, an area of 6.965ha is kept for temporary storage of over burden, 1.2ha for storage of sub-grade ore, 1.9ha for infrastructure, 1.1ha for roads, 6.05ha for proposed railways siding and 4.28ha for safety zone. The Baitarni River is flowing in the buffer zone of the mine at a distance of 2.5km from the mine lease boundary. In addition, eight water bodies namely the Jalpa Nadi(1.5km), the Kasi Nallah(3.5km), the Dolko Nallah(7km), the Dalki Nallah(7.5km), the Ghagra Nallah and the Jagdhara Nadi(8km), the Gahirajala Nallah(8.5km) and the Mithida Spring(9km) are located in the buffer zone of the mine. No national park/wildlife sanctuary/biosphere reserve/tiger reserve/elephant 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. In support of this, a map duly authenticated by the Divisional Forest Officer cum Wildlife Warden, Keonjhar Division has been provided. The Karo Karampada Elephant Corridor is reported to be at a distance of about 25 km from the mine lease. Five Reserve Forests namely the Khajuridihi RF(6km), the Chamakpura (7.5KM), the Siddhamatha RF (8KM), the Baitarni RF (8.5KM) and the Nayagarh RF (9km) are located in the buffer zone of the mine. The mine working will be opencast by mechanized method.

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involving drilling and blasting. The targetted production capacity of the mine is 40,00,000TPA of iron ore and the life of mine is 8years. There will be no beneficiation plant as part of this project; however, crushing and screening will be carried out. The mineral will be transported through the road. The topography of the area is undulated and hilly at an elevation above mean sea level ranging from 530m to 720m AMSL. The ultimate working depth of mine will be 540m AMSL. The ground level is reported at 530m AMSL. The groundwater table in the core zone reported to vary from 476m AMSL(54m bgl) to 478m AMSL(52m bgl) during pre-monsoon and the post-monsoon. The mine working will not intersect the groundwater table. The peak water requirement of the project is estimated as 150m³ 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 76800m³ per month of solid waste will be generated, which will be temporarily disposed of in the earmarked area for backfilling. A total of 0.03million m³ of OB has already been accumulated and another 6.01million m³ of OB is proposed to be generated during the entire life of the mine. Backfilling proposed from the year 2011-2012 onwards and the accumulated waste will be liquidated by the year 2016. Plantation will be raised in an area of 98.8627ha at the end of the mine life and there will be no void left during the post mining stage. The public hearing of the project was held on 05.03.2009 as per the EIA Notification, 2006 for expansion of production of iron ore from 0.21million TPA to 4 million TPA over an area of 106.1127ha. The Ministry of Environment and Forests had conveyed its approval under Forest (Conservation) Act, 1980 for diversion of 35.275 ha forestland (34.675ha for mining and 0.6ha for road) on 03.05.2007. The capital cost of the project is Rs.6121Lakhs and the capital cost for the environmental protection measures is proposed as Rs.61Lakhs. The annual recurring cost towards the environmental protection measures is proposed as Rs.21.98Lakhs.

2. 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 Unchaballi Iron Ore and Manganese Ore Mining Project of M/s Indrani Patnaik for an annual production capacity of four (4.0) million tonnes of iron ore by opencast mechanised method involving total mining lease area of 106.1127ha, subject to implementation of the following conditions and environmental safeguards.

A. Specific Conditions

- (i) 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.
- (ii) Necessary forestry clearance under the Forest (Conservation) Act, 1980 for an area of 103.432ha forestland involved in the project shall be obtained before starting mining operation in that area. Till such time mining activities shall be restricted to an area of 35.275 ha forestland for which approval under Section-2 of the Forest (Conservation) Act, 1980

was granted by the Ministry of Environment and Forests on 03.05.2007. Environmental clearance is subject to grant of forestry clearance. No mining shall be undertaken in the forest area without obtaining requisite prior forestry clearance.

- (iii) The environmental clearance is subject to approval of the State Land Use Department, Government of Orissa for diversion of agricultural land for non-agricultural use.
- (iv) 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.
- (v) The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations. Adequate measures shall be taken for conservation and protection of the seasonal streams, if any emanating from the mine lease area during the course of mining operation.
- (vi) 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.
- (vii) The project proponent shall not undertake beneficiation of the mineral as part of this project. For undertaking beneficiation, necessary prior approval under the provisions of EIA Notification, 2006 shall be obtained.
- (viii) The over burden (OB) generated during the mining operation shall be temporarily stacked at earmarked dump site(s) only for back-filling. Backfilling shall commence from the year 2011-2012 onwards. The accumulated waste shall be liquidated by the year 2016 and there shall be no external dump thereafter. The backfilled area shall be reclaimed by plantation. 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.
- (ix) Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, soil, mineral and temporary OB dumps to prevent run off of water and flow of sediments directly into the Baitarni River, the Jalpa Nadi, the Kasi Nallah, the Dolko Nallah, the Dalki Nallah, the Ghagra Nallah, the Jagdhara Nadi, the Gahirajala Nallah, the Mithida Spring and other 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 both around the mine pit and the temporary over burden dumps to prevent run off of water and flow of sediments directly into the Baitarni River, the Jalpa Nadi, the Kasi Nallah, the Dolko Nallah, the Dalki Nallah, the Ghagra Nallah, the Jagdhara Nadi, the Gahirajala Nallah, the Mithida Spring and other 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.

- (x) Dimension of the retaining wall at the toe of the temporary over burden dump(s) and the OB benches within the mine to check run-off and siltation shall be based on the rainfall data.
- (xi) Plantation shall be raised in an area of 98.8627ha including a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, mine benches, 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 hectare.
- (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 all 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 the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintained.
- (xiv) Regular monitoring of water quality upstream and downstream of the Kasi Nallah, the Dolko Nallah, the Dalki Nallah, the Ghagra Nallah, the Gahirajala Nallah and the Mithida Spring 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, Regional Director, the Central Ground Water Board, the State Pollution Control Board and the Central Pollution Control Board.
- (xv) 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.
- (xvi) 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 Bhubneswar, 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.

- (xvii) Appropriate mitigative measures shall be taken to prevent pollution of the Baitarni River, the Jalpa Nadi and the Jagdhara Nadi, 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) Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.
- (xx) 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 the covered trucks only and the vehicles carrying the mineral shall not be overloaded. No transportation of ore outside the mine lease area shall be carried out after the sunset.
- (xxi) 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.
- (xxii) Drills shall either be operated with the 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.

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- (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. Action plan for conservation of flora and fauna prepared shall be implemented in consultation with the State Forest and Wildlife Department. All the safeguard measures brought out in the Wildlife Conservation Plan prepared specific to this project site shall be effectively implemented. 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. A copy of action plan shall be submitted to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar.
- (xxvii) 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.
- (xxviii) The critical parameters such as SPM, RSPM, NOX 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.
- (xxix) 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 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, 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.
- (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 EC 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 CPCB and the SPCB. The proponent shall upload the status of compliance of the EC 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 CPCB and the SPCB.
- (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 EC conditions and shall also be sent to the Regional Office of the Ministry of Environment and Forests, at Bhubaneswar by e-mail.
- (xvii) 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 at 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 the Environment (Protection) Act, 1986.

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