

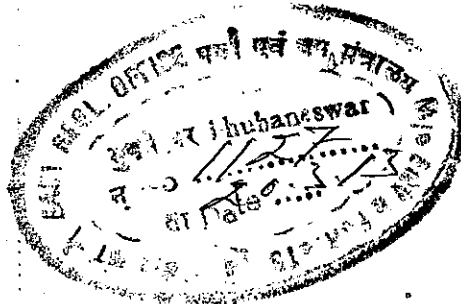
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**BY SPEED POST**

No. J-11015/215/2008-IA.II(M)  
Government of India  
Ministry of Environment & Forests

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

Dated the 11<sup>th</sup> March, 2013



To

M/s Tata Steel Limited  
Jeevan Bharati Building  
Tower-I, 10<sup>th</sup> Floor  
124, Connaught Place  
New Delhi- 110 001  
Email: chanakya@tatasteel.com

**Subject: Enhancement of Production of Joda East Iron Ore Mine and Beneficiation plant of M/s TATA Steel Ltd. located at District Keonjhar, Odisha - environmental clearance - regarding.**

Sir,

This has reference to your letter No. TSLDEL/475/2010 dated 26-09-2011 and subsequent letters dated 18-05-2012 & 04-06-2012 on the subject mentioned above. The project was earlier prescribed Terms of Reference (TORs) by the Ministry of Environment and Forests on 25.11.2008 for undertaking detailed EIA study for the purpose of obtaining environmental clearance. The proposal is for enhancement of production of iron ore from 6 million TPA (ROM) to 12 million TPA (ROM) and expansion of beneficiation plant from 6 million TPA to 12 million TPA throughput. The earlier environmental clearance for 6 million TPA capacity was granted in June, 2008.

2. The mine lease area is 671.093 ha. This includes 608.906 ha of forest land. Forestry clearance has been obtained for 567.087 ha of forest land only. The mine is located between latitudes 21<sup>o</sup>59'N to 22<sup>o</sup>03'N and longitudes 85<sup>o</sup>25' & 85<sup>o</sup>27'E at an elevation of 679 m AMSL highest and 460 m AMSL lowest. Life of mine is 10 years. The mine lease area is 671.093 ha, which includes 608.906 ha of forestland. Baitarani river is at 2.5 km from the mine lease boundary and Kundra nallah is at a distance of 1.6 km. Mineral transportation will include 7 km by road and 140 km by rail. Mine working will be opencast and mechanised involving drilling and blasting. The mine working will not intersect the ground water table. The peak water requirement is estimated as 17,500 m<sup>3</sup> /day, which will be obtained from Kundra nallah. Permission for the withdrawal of water from Kundra Nallah has been obtained for 8,531 kl/day only. No groundwater will be withdrawn. Area to be planted is 11 ha, out of which 8 ha will be on dumps. The slime generated from the wet beneficiation process is stored separately. At present there are two tailing dams. The slime dam where the tailings are being stored presently has a balance capacity of about 12 months. The proposed Manmora pit will have a capacity of about 3 to 4 years, thereafter the height of the existing dams will be raised and the exhausted mined out pits will be used to accommodate the slime

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for the balanced period. The mining plan alongwith PMCP was approved by IBM vide letter no. 314(3)/2003-MCCM(C)/MP-11 dated 3<sup>rd</sup> December, 2005.

3. The baseline AAQ data for the winter season of 2011-12 was presented which showed the levels within permissible limit. It was stated that various steps have been taken for control of RSPM in the project area, which inter-alia included mobile water sprinklers, fixed water sprinklers along haul roads (about 1 km in length), use of dust suppression, making dry fog system more effective, use of chemicals for quick settling of slime etc. Various initiatives taken for water conservation were presented. The details of pipeline from Kundra Nallah to the project site were also presented. It was shown that the pipelines are laid along with hill slope and delivers water at the vertical head of 106 meters. The fluoride concentration in groundwater was reported as 0.3 mg/l.

4. No National park / Wildlife sanctuary / Biosphere reserve / Tiger reserve / Elephant reserve, etc., are reported to be located in the core and buffer zone of within 10 km of the periphery of the project site.

5. Public hearing has been held on 18.08.2011. The action plan for implementation of commitments made during public hearing was also presented and discussed which inter-alia included waste water management, supply of drinking water, education and health care facilities etc. It was reported that there is no court case pending against the project. An amount of Rs. 1,655 lakhs has been earmarked for environment protection measures and an amount of Rs. 30.82 crore has been earmarked for socio-economic measures.

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 for enhancement of production of iron ore from 6 million TPA (ROM) to 12 million TPA (ROM) and expansion of beneficiation plant from 6 million TPA to 12 million TPA throughout for 567.087 ha of forest land for which FC is available and 62.187 ha of non forest land, i.e. a total of 629.274 ha, subject to implementation of the following conditions and environmental safeguards.

#### A. Specific Condition

- (i) No mining activities will be allowed in forest area for which the FC is not available.
- (ii) The project proponent shall seek and obtain approval under the FC Act for diversion of the entire forest land located within the mining lease within a period of two years w.e.f. 01.02.2013, failing which the mining lease area will be reduced to the non forest area plus the forest area for which the project proponent has been able to obtain the FC at the end of this time period. In the case of reduction in mine lease area, the project proponent will need to get a revised mining plan approved from the competent authority for reduced area and enter into a new mining lease as per reduced lease area. The EC will be construed to be available for the mining lease area as per the revised mining lease deed.
- (iii) The project proponent shall abide by the guidelines dated 01.02.2013 vide no. 1-362/2012-FC put in place by the FC Division of MoEF in respect of cases of mines where at present the forest clearance is available to only a part of the forest land involved in the mine.

- (iv) Environmental clearance is subject to obtaining clearance as may be necessary under the Wildlife (Protection) Act, 1972 from the competent authority.
- (v) 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.
- (vi) 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 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.
- (vii) 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.
- (viii) The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations.
- (ix) 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.
- (x) As part of ambient air quality monitoring during operational phase of the project, the air samples shall also be analyzed for their mineralogical composition and records maintained.
- (xi) The water recovery and spill way system shall be so designed that the natural water resources are not affected and that no spill water from the plant goes into the Kundra nallah or any other water body.
- (xii) The filter cake shall be disposed at the earmarked site, which shall be above highest water table and shall be lined to prevent any leaching from the filter cake disposal site into groundwater. Efforts shall also be made to gainfully utilize the filter cake so generated in an environmentally compatible manner.
- (xiii) Effective safeguard measures such as conditioning of ore with water, regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as around crushing and screening plant, loading and unloading point and transfer points. 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 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. There shall be one external OB dump having maximum projected height of 30m with three terraces of 10m each. The overall slope of the dump shall not exceed 27°. The OB dump 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 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.
- (xv) Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine working, soil, OB and mineral dumps. 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 drain of appropriate size, gradient and length shall be constructed for both mine pit and OB dump 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.
- (xvi) Dimension of the retaining wall at the toe of dumps and OB benches within the mine to check run-off and siltation should be based on the rainfall data.
- (xvii) Plantation shall be raised in an area of 11 ha including a 7.5m wide green belt in the safety zone around the mining lease by planting the native species around OB dump, reclaimed area, mine benches, along the roads etc. in consultation with the local DFO/Agriculture Department.
- (xviii) 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 crushing and screening plant, loading and unloading point and 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.
- (xix) 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.
- (xx) 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 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.
- (xxi) 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.
- (xxii) The safeguard measures as suggested by the Central Groundwater Board vide letter No.21-4(231)/CGWA/SER/2010-1010 dated 11.06.2010 shall be effectively implemented.
- (xxiii) The project proponent shall practice suitable rainwater harvesting measures on long term basis and work out a detailed scheme for rainwater harvesting in consultation with the Central Groundwater Authority and submit a copy of the same to the Ministry of Environment and Forests and its Regional Office, Bhubneswar.
- (xxiv) 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 should be covered with a tarpaulin and shall not be overloaded.
- (xxv) 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.
- (xxvi) Drills shall either be operated with the dust extractors or equipped with water injection system.
- (xxvii) 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.
- (xxviii) Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operation.
- (xxix) 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.
- (xxx) 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.

(xxxii) 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 so prepared specific to this project site and approved by the Chief Conservator of Forests (Wildlife) shall be effectively implemented. A copy of Wildlife Conservation Plan shall be submitted to the Ministry of Environment and Forests and its Regional Office, Bhubaneswar.

(xxxiii) The critical parameters such as RSPM (Particulate matter with size less than 10micron i.e., PM<sub>10</sub>) and NO<sub>x</sub> 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](http://www.envfor.nic.in) shall also be referred in this regard for its compliance.

(xxxiiii) 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) At least 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., PM<sub>10</sub>) and 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 [(RSPM (Particulate matter with size less than 10micron i.e., PM<sub>10</sub>) and 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 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 Bhubneswar, 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, Bhubneswar, 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 31<sup>st</sup> 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, Bhubneswar 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.
8. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
9. 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.
10. 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.
11. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

  
(Dr. Saroj)  
Director



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

  
(Dr. Saroj)  
Director