

No. J-11015/63/2008-IA.II(M)Government of India
Ministry of Environment & ForestsParyavaran Bhavan,
C.G.O. Complex, Lodi Road,
New Delhi-110 003.Dated the 26th November, 2010

To

M/s TATA Steel Limited
Katamati Iron Mine,
AT/PO: Noamundi,
District Singhbhum (W),
Jharkhand -833217
E-mail: gm.office@tatasteel.com

Subject: Expansion of Katamati Iron Ore Mining Project of M/s Tata Steel Limited located in Village Katamati, Tehsil Barbil, District Keonjhar, Orissa-environmental clearance regarding.

Sir,

This has reference to your letter No. TSLDEL/128/2010 dated 14.06.2010 and subsequent letters dated 09.08.2010 and 16.08.2010 on the subject mentioned above. The project was earlier prescribed Terms of Reference (TORs) by the Ministry of Environment and Forests on 23.09.2008 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 tonnes per annum (million TPA) to 8.0 million TPA. The project was earlier accorded environmental clearance by the Ministry on 06.05.2005 for production of 2.0million TPA of iron ore. No beneficiation plant is proposed as part of this project; however, tailings from the beneficiation plant located in Noamundi Mine will be disposed in the worked out pit of this mine.

2. The total mine lease area of the project is 403.3238ha, out of which 199.172ha is forestland and 204.1518ha is others (non forestland). Area proposed for mining is 297.8835ha, an area of 31.7ha is kept for over burden dumps, 2ha for mineral storage, 19.1546ha for infrastructure 10.1534ha for roads and pipeline, 6.48ha for railways, 26.9575ha for tailing pond, 3.6599ha for mineral separation plant and 5.3349ha is unutilized area. The Baitarani river is flowing in the buffer zone of the mine at a distance of 9km (SSE) from the mine lease boundary. In addition, the Mahadev Nallah and the Betlata Nallah are flowing in the buffer zone of the mine at a distance of 0.4km (NW) and 7km (S) respectively from the mine lease boundary. Modification/diversion in the existing natural drainage pattern at any stage has not been envisaged.

3. 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

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Schedule-I fauna. Three Reserve Forests (RFs) and eleven Protected Forests (PFs) are located in the buffer zone of the mine. In support of this a map duly authenticated by the DFO cum Wildlife Warden, Keonjhar has been submitted. The Karo Karampada Elephant Corridor is reported to be located at a distance of 21km from the mine lease.

4. The mine working will be opencast by mechanized method involving drilling and blasting. The targetted production capacity of the mine is 8million TPA of iron ore and the life of mine is 10years. Approximately 27000TPD of 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 600m-740m. There are two working pits namely the Eastern Pit and the Western Pit. The present working depth in the Eastern Pit is 655m AMSL and in the Western Pit is 624m AMSL. The ultimate working depth in the Eastern Pit will be 590m AMSL and in the Western Pit it will be 564m AMSL. The groundwater table is reported to be at 519 m AMSL, which is 45 m below the ultimate pit limit. The mine working will not intersect the groundwater table. The peak water requirement of the project is estimated as 3024m³ per day, which will be sourced from the Baltarini River. It has been reported that there is no population in the core zone, displacement of population and R&R has not been envisaged, therefore. Approximately 46,750m³ per month of over burden (laterite, BHJ, canga and shale) will be generated, which will be disposed off in the earmarked areas. A total of 0.815Mm³ of OB has already been accumulated and another 5.61Mm³ of OB is proposed to be generated during the remaining life of the mine. Partial backfilling is proposed. Plantation will be raised in an area of 370.1555ha at the end of the mine life and an area of 11.2ha will be developed as water body during the post mining stage.

5. The public hearing of the project was held on 30.03.2010 for enhancement of production of iron ore from 2.0million TPA of sized ore to 8.0million TPA (ROM) over an area of 403.3238ha. The Indian Bureau of Mines had approved the scheme of mining alongwith PMCP of the project on 29.09.2009 for mine lease area of 403.3238ha. The capital cost of the project is Rs.2500Lakhs and the capital cost for the environmental protection measures is proposed as Rs.250Lakhs. The annual recurring cost towards the environmental protection measures is proposed as Rs.24Lakhs. It has been stated that there is no court case to the project or related activity.

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 Katamatli Iron Ore Mining Project of M/s Tata Steel Limited for an annual production capacity of 8million tonnes of iron ore by the opencast mechanized method involving total mine lease area of 403.3238ha, 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.

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- (ii) Environmental clearance is subject to grant of forestry clearance. Necessary forestry clearance under the Forest (Conservation) Act, 1980 for an area of 199.172ha forestland involved in the project shall be obtained before starting mining operation in that area. No mining shall be undertaken in the forest area without obtaining requisite prior forestry clearance.
- (iii) 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.
- (iv) Environmental clearance is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the competent authority, as may be applicable to this project.
- (v) 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.
- (vi) 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 first order and the second order streams, if any, emanating from the mine lease area 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 subgrade material, if any shall be stacked at the earmarked sites.
- (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 its phase-wise stabilization shall be carried out. Partial backfilling proposed after cessation of mining. The maximum height of the OB dump(s) shall not exceed 30m having three terraces of 10m each and the overall slope of the dumps shall not exceed 27° . It shall be ensured that the OB dump(s) shall have a factor of safety not less than 1.3. The OB dump(s) 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, sub-grade, over burden and mineral dump(s) to prevent run off of water and flow of sediments directly into the Mahadev Nallah, Betlata Nallah, Baitarni River 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 around the mine pit, over burden dumps and sub-grade and mineral dump(s) to prevent run off of water and flow of sediments directly into the Mahadev Nallah, Betlata Nallah, Baitarni River 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.

- (xi) Dimension of the retaining wall at the toe of the over burden dump(s) and the OB benches within the mine to check run-off and siltation shall be based on the rain fall data.
- (xii) Trace Metals such as Ni, Co, As, and Hg should be analysed in dust fall and soil samples for at least one year during summer, monsoon and winter monsoon. If concentrations of these metals are found below the standards then with prior approval of MOEF this specific monitoring could be discontinued.
- (xiii) Plantation shall be raised in an area of 370.1555ha including a 7.5m wide green belt in the safety zone around the mining lease, over burden dump(s), backfilled and reclaimed area, mine benches, around water body, roads etc. In consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per hectare. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.
- (xiv) The void left unfilled in an area of 11.2ha shall be converted into water body. The higher benches of excavated void/mining pit shall be terraced and plantation done to stabilize the slopes. The slope of higher benches shall be made gentler for easy accessibility by local people to use the water body. Peripheral fencing shall be carried out all along the excavated area.
- (xv) 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.

- (xvi) Regular monitoring of the flow rate of the springs and perennial nullahs flowing in and around the mine lease shall be carried out and records maintained.
- (xvii) 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.
- (xviii) 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.
- (xix) Appropriate mitigative measures should be taken to prevent pollution of the Baitarni River in consultation with the State Pollution Control Board.
- (xx) The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water required for the project. The ground water shall not be used for mining operations. Prior approval of Central Ground Water Authority shall be obtained for using ground water.
- (xxi) Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.
- (xxii) 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.
- (xxiii) 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.

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- (xxiv) Drills shall either be operated with the dust extractors or equipped with water injection system.
- (xxv) 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.
- (xxvi) Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operation.
- (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) Effective safeguard measure shall be taken to ensure that the RSPM levels in the area are well below the prescribed standards.
- (xxix) The height of stack shall be as per the prescribed standards / guidelines.
- (xxx) Trace metals such as Fe, Cr +6, Cu, Se, As, Cd, Hg, Pb, Zn and Mn shall be periodically monitored at specific locations in both surface water downstream and in ground water at lower elevations from mine area, in consultation with the OSPCB and State Ground Water Board. Suitable treatment measures shall be undertaken in case levels are found to be higher than permissible limits.
- (xxxi) Occupational health programme encompassing identification of hazards, ranking of the risks, plan to handle such risk should be prepared and implemented effectively.
- (xxxii) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered flora and endangered fauna namely elephant, sloth bear etc. found 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.
- (xxxiii) 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.

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(xxxiv) 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 MOEF and its regional office

(xxxv) The critical parameters such as RSPM (Particulate matter with size less than 10micron 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.

(xxxvi) 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 (Particulate matter with size less than 10micron i.e., PM_{10}) 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., PM_{10}) 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.

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- (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

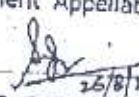
Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.

- (xiv) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad/ 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 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 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.

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10. 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)
Scientist 'E'

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 Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
- (vi) The Chief Conservator of Forests, Regional Office (EZ), Ministry of Environment and Forests, A-3 Chandrashekharpur, Bhubaneswar-751023.
- (vii) The Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118 Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012.
- (viii) The Controller General, Indian Bureau of Mines, Indira Bhawan, Civil Lines, Nagpur-440 001.
- (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.


(SATISH C. GARKOTI)
Scientist 'E'