

No. J-11015/505/2007-IA.II(M)

Government of India
Ministry of Environment and Forests
IA Division

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

Dated the 31st March, 2011

To

✓ M/s Steel Authority of India Limited
Raw Materials Division,
10 Camac Street (5th Floor),
Kolkata-700 017
E-mail: rmdsail@gmail.com

Subject: Ajitaburu Iron Ore Mining Project of M/s Steel Authority of India Limited (SAIL), located in Village Chiria, Tehsil Manoharpur Block, District West Singhbhum, Jharkhand - environmental clearance regarding.

Sir,

This has reference to your letter No. RMD/K/E&L/Chiria/EIA/211 dated 04.08.2009 and subsequent letters dated 09.09.2009, 26.11.2009, 08.02.2010, 11.05.2010 and 25.08.2010 on the subject mentioned above. This project was initially received in the Ministry of Environment and Forests as a combined proposal namely Manoharpur Ore Mining Project and you were advised to submit proposal lease wise. Based on the revised proposal received, the proposal was considered further. The proposal is for renewal of mine lease which fall due since December, 2007 and enhancement of iron ore production to 2.8 million tonnes per annum (million TPA). The mine is reported to be closed presently since 1995.

2. The total mine lease area of the project is 323.887ha, which is a forestland falling under Ankua Reserved Forest of Saranda Forest Division. Area proposed for excavation is 55.486ha, an area of 12ha is kept for over burden dumps, 2ha for mineral storage, 52.55ha for infrastructure, 7.5ha for roads, 23.5ha for green belt and afforestation and 170.851ha is others (untouched area). The Koina River is flowing in the buffer zone of the mine at a distance of 3.6km from the mine lease boundary. The Hamsadagaar Nalla is reported to flow adjacent to mine lease boundary. The Karo River and the Koel River are flowing outside the buffer zone of the mine at a distance of 10.25km and 10.5km respectively from the mine lease boundary.

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 entire mine lease area falls within the core

zone of Singhbhum Elephant Reserve. The Principal Chief Conservator of Forests, Biodiversity Conservation cum Chief Wildlife Warden, Jharkhand vide their letter No. 189(WL)09-10/654 dated 15.09.2009 stated that the proposed mine lease area falls within the core area of the Singhbhum Elephant Reserve and that no national park/wildlife sanctuary/ biosphere reserve are located within 10 km. of the mine lease. The elephant corridors are reported beyond 10km.

4. The mine working will be opencast by mechanized method involving drilling and blasting. The targetted production capacity of the mine is 2.8million TPA of iron ore and the life of mine is 172years. It is proposed that an additional common crushing and screening plant of 7million TPA will be established as part of this mine lease. It has been stated that the mineral will be transported through the rail and conveyor. The topography of the area is hilly at an elevation above mean sea level ranging from 520m to 820m. The present working depth of mine is reported as 775m AMSL and the ultimate working depth of mine will be 500m AMSL. It has been reported that the proposed mining area has ground water level at about 400m AMSL. The mine working will not intersect the ground water table. The peak water requirement of the project is estimated as 2570m³ per day, which will be obtained from the Chiria spring. It has been reported that there is no population in the core zone, therefore, displacement of population and R&R has not been envisaged. Approximately 11,112m³ per month of waste/inter burden will be generated, which will be dumped in the earmarked areas for utilizing in pit backfilling. There is one existing OB dump in an area of 2ha, which has been stabilized and not to be used in future. It is estimated that 4.855million tonnes of waste will be generated during lease period which will be disposed in an area of 12ha. The maximum height of the dump will be 34m with first bench at a height of 20m. It has been mentioned that plantation will be raised in an area of 92.986ha and there will be no water body left during the post mining stage.

5. The public hearing of the project was held on 29.12.2006 as per the EIA Notification, 2006 combinedly for all mining leases in the name of Manoharpur Ore Mines in favour of M/s Indian Iron and Steel Company Ltd., Manoharpur Ore Mines. The proponent has provided an undertaking in the Stamp Paper that IISCO has been merged and amalgated into Steel Authority of India Limited(SAIL) w.e.f.1st April, 2005 and the mine lease has been transferred in the name of SAIL. A written commitment was made by the proponent that the commitments made during public hearing by the erstwhile IISCO will be fulfilled by SAIL. The Indian Bureau of Mines had approved the mining plan alongwith progressive mine closure plan of the project on 27.01.2010 for lease area of 323.887ha. The Ministry of Environment and Forests has accorded Stage-I forestry clearance for diversion of 153.036ha forestland (58.25ha broken up area and 94.786ha fresh area) on 07.03.2011. The capital cost of the project is Rs.1243.335Crores. The capital cost for environmental protection measures is proposed as Rs.945Lakhs and the annual recurring cost towards the environmental protection measures is proposed as Rs.178.5Lakhs. It has

been mentioned in the questionnaire 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 Ajitaburu Iron Ore Mining Project of M/s Steel Authority of India Limited for an annual production capacity of 2.8million tonnes of iron ore by opencast mechanised method involving total mining lease area of 323.887ha, 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 Jharkhand State Pollution Control Board and effectively implement all the conditions stipulated therein.
- (ii) 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.
- (iii) Environmental clearance is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the competent authority, as may be applicable to this project.
- (iv) Environmental clearance is subject to obtaining clearance under Forest (Conservation) Act, 1980 for diversion of forestland. Mine working shall be restricted to the area for which forestry clearance has been obtained.
- (v) Prior environmental clearance from the Standing Committee of the National Board for Wildlife shall be obtained due to location of the mine within the core zone of 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.
- (vi) The mining operations shall be restricted to above the groundwater table and it should not intersect the groundwater table. In case of working below the groundwater 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. The first order streams and the seasonal nallahs originating from the mining lease area shall be protected.
- (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. There shall be two external over burden dumps. The stabilized dump in area of 2ha shall not be used for dumping in future. The new dump created in an area of 12ha shall have maximum projected height of 34m. The maximum height of the newly created dump shall not exceed 34m having two terraces and the overall slope of the dump 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, mineral and OB dump(s) to prevent run off of water and flow of sediments directly into the Hamsadagaar Nalla, the Koina River, the seasonal nallahs 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, soil, mineral and over burden dumps to prevent run off of water and flow of sediments directly into the Hamsadagaar Nalla, the Koina River, the seasonal nallahs 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 dumps and the OB benches within the mine to check run-off and siltation shall be based on the rain fall data.

- (xii) Plantation shall be raised in an area of 92.986ha including a 7.5m wide green belt in the safety zone around the mining lease, over burden dumps, 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 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 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.
- (xvi) 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.
- (xvii) Regular monitoring of water quality upstream and downstream of the Hamsadagaar Nalla shall be carried out and record of monitored data should be maintained and submitted to the Ministry of Environment and Forests, its Regional Office, Bhubneswar, the Central Groundwater Authority, the Regional Director, Central Ground Water Board, the State Pollution Control Board and the Central 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) Appropriate mitigative measures shall be taken to prevent pollution of the Koina River in consultation with the State Pollution Control Board.
- (xxi) 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 from mine face to the beneficiation plant. The vehicles shall be covered with a tarpaulin and shall not be overloaded.
- (xxii) 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.
- (xxiii) 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 Bhubneswar.
- (xxiv) Drills shall either be operated with 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) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna namely elephant, sloth bear, Indian wolf, python etc. spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be

included in the project cost. All the safeguard measures brought out in the Wildlife Conservation Plan so prepared specific to the project site shall be effectively implemented. A copy of action plan shall be submitted to the Ministry of Environment and Forests and its Regional Office, Bhubaneswar.

- (xxix) 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.
- (xxx) No transportation of ore outside the mine lease area shall be carried out after the sunset.
- (xxxi) 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.
- (xxxii) 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) 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 $10\mu\text{m}$ 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 $10\mu\text{m}$ i.e., PM_{10}) & NO_x should be regularly submitted to the Ministry of Environment and Forests including its Regional office located at Bhubneswar 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 of Environment and Forests and its Regional Office located at Bhubneswar.
- (xi) The project authorities should inform to the Regional Office located at Bhubneswar 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 Bhubneswar 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 Bhubneswar, the respective Zonal Office of Central Pollution Control Board the State Pollution Control Board. 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, Bhubneswar, the respective Zonal Office 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 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 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 Bhubneswar.
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 Jharkhand and any other Court of Law relating to the subject matter.


 (SATISH C. GARKOTI)
 Scientist 'F'

Copy to:

- (i) The Secretary, Ministry of Mines, Government of India Shastri Bhawan, New Delhi.
- (ii) The Secretary, Department of Environment, Government of Jharkhand, Secretariat, Ranchi.
- (iii) The Secretary, Department of Mines, Government of Jharkhand, Secretariat, Ranchi.
- (iv) The Secretary, Department of Forests, Government of Jharkhand, Secretariat, Ranchi.
- (v) The Principal Chief Conservator of Forests, Biodiversity Conservation cum Chief Wildlife Warden, Government of Jharkhand, Secretariat, Ranchi.
- (vi) The Chief Conservator of Forests, Ministry of Environment & Forests, Regional Office (EZ), A/3, Chandra Shekar, Bhubneshwar-751 023.
- (vii) The Chairman, Central Pollution Control Board, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
- (viii) The Chairman, Jharkhand State Pollution Control Board, T.A. Division Building (Ground Floor), HEC Campus, P.O. Dhurwa, Ranchi - 834004, Jharkhand.
- (ix) The Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- (x) The Controller General, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur-440 001.
- (xi) The District Collector, West Singhbhum District, Jharkhand.

- (xii) EI Division, Ministry of Environment & Forests, EI Division, New Delhi.
- (xiii) Monitoring File.
- (xiv) Guard File.
- (xv) Record File.