

No.J-11015/243/2005-IA.II (M)  
Government of India  
Ministry of Environment & Forests

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

Dated the 23<sup>rd</sup> June 2006

To,

M/s Indian Aluminium Co. Ltd.,  
Bagru Hill Bauxite Mines,  
P.O.& District-Lohardaga,  
Pin-835 302,  
Jharkhand

Subject: Serangdag Bauxite Mining Project of M/s Indian Aluminium Co. Ltd., located in Village(s) Serangdag, Paunri and Hamrup, Tehsil Bishunpur and Ghaghra, District Gumla, Jharkhand - environmental clearance reg.

Sir,

This has reference to the Department of Mines and Geology, Government of Jharkhand letter No.Khani(Vividh)-132/05/M-960 dated 07.07.2005 and your letters dated 16.08.2005, 26.10.2005 and 08.11.2005 on the subject mentioned above. The Ministry of Environment and Forests has examined the application. It has been noted that the proposal is for opening of a new mine. The total mine lease area of the project is 140.07ha, out of which 65.51 ha is an agricultural land, 62.18 ha is forestland, 10.11 ha is wasteland and 2.27 ha others (Government wasteland). Area proposed for mining is 13.82 ha, an area of 3.0 ha is kept for roads, 2.0 ha for infrastructure, 37.1 ha for afforestation area and 84.15 ha is undisturbed area. No ecologically sensitive area such as national park, wildlife sanctuary/biosphere reserve, tiger reserve etc. is located in the core and buffer zone of the mine. There is no population in the core zone, displacement of population and R&R is not involved. The annual targeted production capacity of the mine is 1,00,000 tonnes(0.1million tonnes) of bauxite ore. Working will be open cast by semi-mechanised method involving controlled blasting. The ultimate working depth of mine will be 14m from the plateau top. Ground water table is reported to be at 90-100m below plateau top. Mining will not intersect the groundwater table. Peak water requirement is 15 m<sup>3</sup> /day, out of which 13 m<sup>3</sup>/day will be met from mine sump and remaining 2 m<sup>3</sup>/day from other surface water bodies such as natural spring. Approximately 7875m<sup>3</sup>/month of solid waste comprising 800 m<sup>3</sup>/month of topsoil and 7075 m<sup>3</sup>/month of over burden (murrum/ laterite) will be generated. During the initial years, over burden will be stacked as external dump, which will be later backfilled concurrently.

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from the 4<sup>th</sup> year onwards in mined out voids. The entire quantity of the over burden generated will be backfilled. At the end of the mine life there will be no external OB dumps. The entire excavated area will be converted into water body. NOC from Jharkhand State Pollution Control Board obtained on 31.08.2004 for production of 400TPD of Bauxite. Public hearing of the project held on 21.06.2004. Indian Bureau of Mines has approved mining scheme of the project on 24.10.2005 for lease area of 140.07 ha. Capital cost of the project is Rs.550.0 lakhs.

2. The Ministry of Environment and Forests hereby accords environmental clearance to the above mentioned Serangdag Bauxite Mining Project of M/s Indian Aluminium Co. Ltd. for production capacity of One Lakh TPA(0.1millionTPA) of bauxite ore by opencast method involving total lease area of 140.07 ha, under the provisions of the EIA Notification 1994 and subsequent amendments issued under Environment (Protection) Act, 1986 subject to implementation of the following conditions/safeguards.

**A. Specific conditions**

- (i) All the conditions stipulated by the State Pollution Control Board in their consent to establish should be effectively implemented.
- (ii) The environmental clearance is subject to approval of the State Landuse Department, Government of Jharkhand for diversion of agricultural land for non-agricultural use.
- (iii) Necessary forestry clearance under the Forest (Conservation) Act, 1980 for an area of 62.18 ha forestland shall be obtained before starting mining operation in that area.
- (iv) Top soil shall be stacked properly with proper slope with adequate measures and should be used for reclamation and rehabilitation of mined out areas.
- (v) The waste generated in the initial period shall be dumped temporarily and backfilled in the mined out area. There shall be no permanent external OB dump in the project area. Concurrent backfilling should start from the fifth year onwards. 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 on six monthly basis.
- (vi) Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil and mineral dump. 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 (size, gradient and length) shall be constructed for mine pit 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.

- (vii) Plantation shall be raised in an area of 37.1 ha including a green belt of adequate width by planting the native species around the ML area, roads, OB dump sites etc. in consultation with the local DFO / Agriculture Department. The density of the trees should be around 1500 plants per ha.
- (viii) The mining operations shall not intersect groundwater table. Prior approval of the Ministry of Environment & Forests and Central Ground Water Authority shall be obtained for mining below water table.
- (ix) 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.
- (x) Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out four times in a year – pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to MOEF, Central Ground Water Authority and Regional Director Central Ground Water Board.
- (xi) Prior permission from the competent authority should be obtained for drawal of water from the surface water bodies.
- (xii) The project proponent shall monitor the spring discharge on long term basis (at least one major spring) both in terms of quantity and quality of water and records maintained. Six monthly report should be submitted to the Ministry of Environment and Forests and its Regional Office located at Bhubneshwar.

- (xiii) Vehicular emissions should 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.
- (xiv) The higher benches of the excavated void to be converted in to water reservoir shall be terraced and afforested to stabilize the slopes. Peripheral fencing shall be done along the excavated area.
- (xv) Drills should either be operated with dust extractors or should be equipped with water injection system.
- (xvi) Blasting operation should be carried out only during the daytime. Controlled blasting should be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.
- (xvii) Consent to operate should be obtained from SPCB prior to start of production from the mine.
- (xviii) Sewage treatment plant should be installed for the colony. ETP should also be provided for workshop and wastewater generated from mining operations.
- (xix) The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered flora and fauna spotted in the study area. Action plan for conservation of endangered 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. Copy of action plan may be submitted to the Ministry and its Regional Office within 3 months.
- (xx) 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 bauxite and waste should be made.

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- (iii) Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RPM, SPM, SO<sub>2</sub>, 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 (RPM, SPM, SO<sub>2</sub>, NO<sub>x</sub>) should be regularly submitted to the Ministry including its Regional office located at Bhopal 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 project authorities should inform to the Regional Office located at Bhubneshwar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.

- (xi) 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 Bhubneshwar.
  - (xii) The project authorities should inform to the Regional Office located at Bhubneshwar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
  - (xiii) The Regional Office of this Ministry located at Bhubneshwar 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.
  - (xiv) A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom and suggestion / representation has been received while processing the proposal.
  - (xv) State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office/ Tehsildar's Office for 30 days.
  - (xvi) 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 Bhubneshwar.
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 Environment (Protection) Act, 1986.
  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.

  
(SATISH C. GARKOTI)  
Additional Director (S)

Copy to:

1. Secretary, Ministry of Mines, Government of India Shastri Bhawan, New Delhi.
2. Secretary, Department of Environment, Government of Jharkhand, Secretariat, Ranchi.
3. Secretary, Industries and Mines Department, Government of Gujarat, Secretariat, Ranchi.
4. Secretary, Department of Forest, Government of Jharkhand, Secretariat, Ranchi.
5. Chief Conservator of Forests, Ministry of Environment & Forests, Regional Office (EZ), A/3, Chandra Shekar, Bhubneshwar-751 023
6. Chairman, Central Pollution Control Board, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
7. Chairman, Jharkhand State Pollution Control Board, Nepal House, Dorenda, Ranchi
8. Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
9. Controller General, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur-440 001.
10. District Collector, Gumla District, Jharkhand.
11. EI Division, Ministry of Environment & Forests, EI Division, New Delhi.
12. Monitoring File.
13. Guard File.
14. Record File.