

No. J-11015/531/2007-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 17th June, 2011

To

M/s Hindalco Industries Limited
Court Road, Lohardaga,
Jharkhand

E-mail: karun.dave@adityabirla.com
kkdave@adityabirla.com
kkdave2@rediffmail.com

Subject: Hisri (New) Bauxite Mining Project of M/s Hindalco Industries Limited located in Village(s) Hisri, Chanpi & Korgo, Tehsil Kisko, District Lohardaga, Jharkhand - environmental clearance regarding.

Sir,

This has reference to your letter No. HIL/LHD/V.P.(M)/MoEF/EC/1023 dated 03.03.2010 and subsequent letters dated 03.01.2011, 23.02.2011 & 25.02.2011 on the subject mentioned above. The project was earlier prescribed Terms of Reference (TORs) by the Ministry of Environment and Forests on 15.02.2008 for undertaking detailed EIA study for the purpose of obtaining environmental clearance. The proposal is for renewal of mine lease, (although for all practical purposes it is a new mine as it has never been worked in the past) for production of 1,00,000tonnes per annum(TPA)(0.1million TPA) of bauxite. It is a Category 'B' project, however, in the absence of SEIAA, Jharkhand, the proposal has been considered in the Ministry of Environment and Forests.

2. The total mine lease area of the project is 14.55ha, out of which 9.85ha is an agricultural land, 4.47ha is forestland and 0.23ha is wasteland(barren land). Area proposed for excavation is 12.19ha, an area of 0.012ha is kept for roads, 0.51ha for green belt and 1.838ha is others(unused area). The Kisco Nadi (3.5km E), the Sukri Nadi (3.5km E), the Chaupan Nadi (7km WNW), the Banki Nadi (7.9km SSE), the Chaupat Nadi (8km NW) and the Kawa Nadi (8.3km W) are reported to be flowing in the buffer zone of the mine. In addition, the Chungahat nallah(1.2km W) and the Barki nallah(3.4km S) are reported to be located in the buffer zone of the mine. No modification/diversion in the existing natural drainage pattern at any stage has been envisaged.

..2/-



h

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. Seven reserve forests and five protected forests are reported to be located in the buffer zone of the mine.

4. The mine working will be opencast by mechanized method involving drilling and blasting. The targetted production capacity of the mine is 1,00,000TPA of bauxite and the life of mine is 10years. Mineral transportation is proposed through road(224TPD) and ropeway(149TPD). The topography of the area is a plateau top and reported to lies between 23⁰28'40" to 23⁰28'59" N Latitude and 84⁰35'04" to 84⁰35'28" E Longitude in Survey of India topo sheets No. 73 A/10, A/11, at an elevation above mean sea level ranging from 1025m-1052m. The ultimate working depth of mine will be 1007m AMSL. The groundwater table in the core zone reported to vary between 905m AMSL(pre-monsoon) to 935m AMSL(post-monsoon). The mine working will not intersect the groundwater table. The water requirement of the project is estimated as 8m³ per day, which will be sourced from the Chanpi reservoir. 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 4502m³ per month of solid waste comprising of 782m³ per month of topsoil(soil and murrum); 3277m³ per month of over burden(laterite) and 443m³ per month of mineral rejects will be generated, which will be used for backfilling. The over burden will be simultaneously backfilled and there will be no external OB dump. The entire excavated area of 12.19ha will be backfilled and reclaimed. Plantation will be raised in an area of 12.7ha at the end of the mine life.

5. The public hearing of the project was held on 10.10.2009 for production of 1.1LTPA over an area of 14.55ha. The Indian Bureau of Mines had approved the Scheme of mining alongwith PMCP of the project on 06.10.2010 for lease area of 14.55ha. The Ministry of Environment and Forests, Eastern Regional Office, Bhubaneshwar has agreed in principle for diversion of 4.47ha forestland vide their letter dated 06.04.2009. The capital cost of the project is Rs.80.84Lakhs. 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 Hisri (New) Bauxite Mining Project of M/s Hindalco Industries Limited for an annual production capacity of 1,00,000tonnes(0.1million tones) of bauxite by the opencast mechanized method, involving total mine lease area of 14.55ha, subject to implementation of the following conditions and environmental safeguards.

..3/-



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) The environmental clearance is subject to forestry clearance.
- (iii) The environmental clearance is subject to approval of the State Landuse Department, Government of Jharkhand for diversion of agricultural land for non-agricultural use.
- (iv) The mining operations shall be restricted to above groundwater table and it should not intersect the groundwater table. In case of working below 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.
- (v) 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.
- (vi) The top soil, if any shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.
- (vii) The solid waste generated during the mining operation shall be backfilled and there shall be no external over burden dump left at the end of the mine life. The entire excavated area of 12.19ha shall be backfilled and reclaimed by plantation. The back filling should be carried out in such a manner that it is restored to the normal ground level. 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, Bhubneshwar on six monthly basis.
- (viii) Catch drains and siltation ponds of appropriate size shall be constructed around the working pit, sub-grade dump, soil and mineral dumps to arrest flow of silt and sediment directly into the agricultural fields, the Kisco Nadi, the Sukri Nadi, the Chungahat nallah, the Barki nallah and others water bodies. 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 drains settling tanks and check dams of appropriate size, gradient and length shall be constructed for both around the mine pit and sub-grade dump to prevent run off of water and flow sediments directly into the agricultural fields, the Kisco Nadi, the Sukri Nadi, the Chungahat nallah, the Barki nallah and others 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 should be constructed at the corners of the garland drains and desilted at regular intervals.

- (ix) Dimension of the retaining wall at the toe of sub-grade dump and OB benches within the mine to check run-off and siltation should be based on the rain fall data.
- (x) Plantation shall be raised in an area of 12.7ha including a 7.5m wide green belt in the safety zone around the mining lease by planting the native species around ML area, backfilled and reclaimed area, around water body, roads etc. in consultation with the local DFO/Agriculture Department. At least 1500 trees per year shall be planted with a tree density of 1000 trees per hectare. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.
- (xi) 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.
- (xii) 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.
- (xiii) 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.

- (xiv) Monitoring of the springs shall be carried out for the quality and quantity of water regularly so as to ensure that there is no adverse impact on the same due to the project. Records in this regards shall be maintained.
- (xv) It shall be ensured that there is no change in the hydrology of the area due to the project.
- (xvi) 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.
- (xvii) Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.
- (xviii) Appropriate mitigative measures shall be taken to prevent pollution of the Kisco Nadi, the Sukri Nadi and other rivers in the buffer zone of the mine, in consultation with the State Pollution Control Board.
- (xix) 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.
- (xx) 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.
- (xxi) Drills shall either be operated with dust extractors or equipped with water injection system.
- (xxii) 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.
- (xxiii) Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operation.

- (xxiv) The project authorities should undertake sample survey to generate data on pre-project community health status within a radius of 1 km from proposed mine.
- (xxv) Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.
- (xxvi) 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.
- (xxvii) 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.
- (xxviii) 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.
- (iii) Conservation measures for protection of flora and fauna in the core & buffer zone should be drawn up in consultation with the local forest and wildlife department.
- (iv) 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.

- (v) Data on ambient air quality RSPM (Particulate matter with size less than 10µm i.e., PM₁₀) & 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.
- (vi) 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.
- (vii) 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.
- (viii) 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.
- (ix) 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.

- (x) 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.
- (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 of Environment and Forests and its Regional Office located at Bhubneswar.
- (xii) 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.

- (xiii) 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.
- (xiv) 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 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 Office of Central Pollution Control Board and the State Pollution Control Board.
- (xv) 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.
- (xvi) 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.
- (xvii) 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.
- (xviii) The Company shall submit within 3 month their policy towards Corporate Environment Responsibility which should inter-alia address (i) Standard operating process/procedure to bring into focus any infringements/deviation/violation of environmental or forest norms/conditions, (ii) Hierarchical system or Administrative order of the company to deal with environmental issues and ensuring compliance with Environment Clearance conditions and (iii) System of reporting of non compliance/violation of environmental norms to the Board of Directors of the Company and/or stakeholders or shareholders.

(xix) 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.



(Dr. S.K. Aggarwal)
Director

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.

..10/-

(vi)



- (vii) The Chief Conservator of Forests, Ministry of Environment & Forests, Regional Office (EZ), A/3, Chandra Shekar, Bhubneshwar-751 023.
- (viii) The Chairman, Central Pollution Control Board, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
- (ix) The Chairman, Jharkhand State Pollution Control Board, T.A. Division Building (Ground Floor), HEC Campus , P.O. Dhurwa, Ranchi ? 834004, Jharkhand.
- (x) The Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- (xi) The Controller General, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur-440 001.
- (xii) The District Collector, Lohardaga District, Jharkhand.
- (xiii) EI Division, Ministry of Environment & Forests, EI Division, New Delhi.
- (xiv) Monitoring File.
- (xv) Guard File.
- (xvi) Record File.