

By Speed Post

No. J-11015/297/2011-IA.II (M)

Government of India
Ministry of Environment, Forest and Climate Change
Impact Assessment Division

Indira Paryavaran Bhavan,
Jor Bag Road, Aliganj
New Delhi-110 003

Dated: 21st July, 2015

To,

M/s Hindalco Industries Limited
Mines Division-Lohardaga,
Court Road, P.O. & District- Lohardaga
Jharkhand, Pin-835 302

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Subject: Enhancement of production of bauxite from 0.15 million TPA to 0.3 million TPA (ROM) for Kujam-II Bauxite mine by M/s Hindalco Industries Limited, located at Village(s) Kujam & Chirodih, Thana-Bishnupur, District-Gumla, Jharkhand (157.38ha)- Environmental Clearance regarding.

This has reference to your letter no. HIL/LHD/VP(M)/MOEF/248 dated 22.10.2013 and subsequent letter dated 16.10.2014 and 23.03.2015 on the above mentioned proposal of M/s Hindalco Industries Limited for Enhancement of production of bauxite from 0.15 million TPA to 0.3 million TPA (ROM) for Kujam-II Bauxite mine. The mine is located at Village(s) Kujam & Chirodih, Thana-Bishnupur, District-Gumla, Jharkhand. The mine lease is located near villages Mauza - Kujam & Chirodih, Thana - Bishunpur, Gumla District, Jharkhand. The study area covers 10 km radius around the mine lease area and it is lies between Latitudes 23°16'15" to 23°17'30" N, Longitudes 84°17'10" to 84°18'30" E and is covered by topo-sheet no. 73 A/7.

2. The Ministry had prescribed TOR on 26.03.2012. The Proponent after conducting Public Hearing on 11.07.2013 submitted the EIA/EMP report for seeking environmental clearance. The proposal was appraised before the Expert Appraisal Committee in its Expert Appraisal Committee Meeting held during December 16-17, 2013 wherein the Committee deferred the proposal and sought information/clarifications. Further, the proposal was reconsidered in the EAC meeting held during November 24-25, 2014 wherein the Committee recommended the Proposal for environmental clearance for enhancement of Bauxite Production Capacity from 0.15 million TPA to 0.3 million TPA (ROM). Further, the Ministry has decided that first EC given earlier in the name of M/s INDAL to be transferred in the name M/s Hindalco Industries Limited. Accordingly, the Ministry vide letter dated 07.07.2015 has transferred the earlier EC no. J-11015/242/2005-IA.II (M) dated 14.08.2006 from M/s INDAL to M/s Hindalco Industries Limited.

3. The proposal of M/s Hindalco Industries Limited is for Kujam-II Bauxite mine with enhancement of production of bauxite from 0.15 million TPA to 0.3 million TPA (ROM). The mine lease area is 157.38 ha. No forest land is involved. Out of 157.38 ha, 140.10 ha is agricultural land, 17.28 ha is waste land. Modified Mining Plan has been approved by IBM vide letter dated 22.07.2011. The life of the mine is 13 years. The method of mining is opencast mechanized. The blasted material would be sorted out manually, loaded into trucks and sent to the Railway Siding to be transported to their captive Aluminium Plant at Muri. Proponent reported that at the end of the life of mine, reclaimed area will be 94.91ha (92.71 ha reclaimed by plantation and 2.2ha converted into water reservoir). It was reported that Ground water will not be intersected during scheme period. The site elevation is about 1068 m above MSL. The total water requirement of Kujam II mine lease is 23 m³/day. As there are no perennial sources of water on the hill-top, the villagers get potable water from nearby natural springs and hand pumps.

4. The mining lease was originally granted over an area of 157.38 ha, vide order no. 3BM II-2-97-1589/M dated 19.08.2005 in the name of M/s Indian Aluminum Company Limited (INDAL) and accordingly the Environment Clearance was obtained vide letter no. J-11015/242/2005-IA.II (M) dated 14.08.2006 for a production capacity of 0.15 million TPA of bauxite. It is reported by the Proponent that M/s INDAL merged with M/s Hindalco Industries Limited and accordingly the mining Lease deed is executed. The mine lease was granted on 24.03.2006 for 20 years and valid upto 23.03.2026. The Ministry vide letter dated 07.07.2015 has transferred the earlier EC no. J-11015/242/2005-IA.II (M) dated 14.08.2006 from M/s INDAL to M/s Hindalco Industries Limited.

5. The certified Compliance Report of the conditions stipulated in the earlier EC was submitted by the Regional Office of MoEFCC, Ranchi vide letter dated 01.10.2013. The Committee deliberated the compliance status of earlier EC at length and noted that the Regional Office has pointed out some deficiencies, accordingly RO was asked to submit the verification of compliance status. In this context, Regional Office of MoEFCC, Ranchi vide letter dated 14.10.2014 has submitted the Certified Compliance Report of earlier EC on the observation made by EAC. The Committee discussed the comments of Regional Office and was satisfied.

6. Proponent reported that there is no National Park, Wildlife Sanctuary, Biosphere Reserve, Wildlife corridors, Tiger/Elephant Reserves/Schedule-I species/migratory paths of birds and animals, within 10 km radius of the mining project site. In ecological study, 327 plants species were recorded during study period. There are no endangered species of fauna reported or observed in the vicinity of the project area. Three Reserved Forests and Eighteen Protected Forests exist within 10 km radius of mine site. With regard to details of precautions for protection of Chirodh PF, Proponent mentioned that Chirodh PF will be protected by fencing around the forest boundary as well as guarding from trespassers. Proponent informed that fencing adjacent to lease boundary of Chirodh PF has been done by barbed wire. Length of fencing is around 400 mtrs (in 3 places). With regard to details of R&R plan, Proponent mentioned that there is no displacement of people is involved due to the project. Land acquired is duly compensated as per State Govt. directives from time to time. As per 2011 census, the study area consisted of 46,203 persons inhabited in study area of 10 km radius distance from the periphery of the ML area.

7. The Baseline data were collected during pre-monsoon season i.e. March 2012–May 2012. The Committee deliberated on the Baseline data and found that the principle environment parameters are well within the permissible limits. With regard to impacts due to other mining activity, Project Proponent mentioned that the cumulative incremental concentration of PM₁₀ due to the mines in study area is observed to be 40 µg/m³ considering the worst case scenarios that all the four mines are under operation without any control measures in place. The Particulate Matter emissions due to the existing mines are already covered in baseline air quality. With the implementation of all the control measures, the incremental concentrations at the lease boundaries will be about 4.3 µg/m³.

8. Public Hearing was conducted on 11.07.2013 at Government Primary School, Banari village, Teshil-Bisunpur, District-Gumla. The Public Hearing was presided over by Smt. Christina Hansda, AC, Gumla. The representative of Regional Office SPCB was also present. The issues raised during Public Hearing were discussed during the Meeting, which inter-alia, included, local employment, regular water spraying to prevent pollution and socio economic development i.e. water facilities, medical and education etc. As per the villager's requirements, it was informed by the Proponent that they would prefer to take care of local employment, assistance in medical, drinking water and education facilities etc. These have been incorporated in the action plan with budgetary provisions.

9. The total capital cost of the project is Rs. 8.75 Crores. The Proponent has earmarked Rs. 3.35 Crores towards Environmental Protection Measures. Proponent informed that about 3.0 ha land with 6000 samplings will come under greenbelt development plan. Total Rs. 86 Lakhs has been spent for the rural and community development activities during the period of 2005-2013. Proponent has informed that there is no court case/litigation pending against the mining project.

10. The Ministry of Environment, Forest and Climate Change has examined the proposal in accordance with the Environmental Impact Assessment Notification, 2006 and further amendments thereto and hereby accords the environmental clearance under the provisions thereof to the above mentioned proposal of **M/s Hindalco Industries Limited for Kujam-II Bauxite mine with enhancement of production capacity of bauxite from 0.15 million TPA to 0.3 million TPA (ROM) in the mine lease area of 157.38ha, located at village(s) Kujam & Chirodih, Thana-Bishnupur, District-Gumla, Jharkhand** subject to compliance of the followings terms and conditions and environmental safeguards mentioned below:-

A. Specific conditions

- (i) Implementation of all the conditions as specified in earlier EC vide no. J-11015/242/2005-IA.II (M), dated 14.08.2006 and shall be complied by M/s Hindalco Industries Limited.
- (ii) Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court of Jharkhand and any other Court of Law, if any, as may be applicable to this project.
- (iii) The environmental clearance is valid for 13 years as the life of mine is 13 years.

- (iv) Environmental clearance is subject to obtaining clearance, if any, under the Wildlife (Protection) Act, 1972 from the competent authority, as may be applicable to this project.
- (v) The Project Proponent shall obtain Consent to Operate from the State Pollution Control Board, Jharkhand and effectively implement all the conditions stipulated therein.
- (vi) No mining activities will be allowed in forest area for which the Forest Clearance is not available.
- (vii) Project Proponent has to conduct a study from an Institution of Repute on the impact of Bauxite dust on Crop Productivity for agricultural land located around mines and mitigation measures to be implemented by Project Proponent to reduce the impact.
- (viii) Project Proponent has to implement the Recommendation by the Institute for Crops most suited in this environment and training to the farmers to switch over to new cropping system which will sustain nutrient loading.
- (ix) Implementation of the Recommendations of National Institute of Miners Health for ensuring good occupational environment for mine workers.
- (x) Use of mechanical devices with total mechanization and reducing use of explosives.
- (xi) Concurrent reclamation of mined out areas.
- (xii) Use of effective sprinkler system to suppress fugitive dust on haul road and other transport road and comprehensive study for slope stabilization of mine benches and OB dumps in one year.
- (xiii) Implementation of Action Plan on the issues raised during the Public Hearing. The proponent shall complete all the tasks as per the action plan submitted with the budgetary provisions during the public hearing held on 11.07.2013. The issues raised during Public Hearing were discussed during the Meeting, which inter-alia, included, local employment, regular water spraying to prevent pollution and socio economic development i.e. water facilities, medical and education etc. As per the villager's requirements, it was informed by the Proponent that they would prefer to take care of local employment, assistance in medical, drinking water and education facilities etc. These have been incorporated in the action plan with budgetary provisions.
- (xiv) Implementation of Recommendations of Compliance Report by Regional Office of Ministry of Environment, Forest and Climate Change.
- (xv) Washing of all transport vehicles should be done inside the mining lease.
- (xvi) A comprehensive ore evacuation plan for all existing mines of the Project Proponent in the area may be made by streamlining transport of ore based

on proper study.

- (xvii) Regular and periodical medical examination of the workers engaged in the project shall be carried out and records maintained; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smokers, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly.
- (xviii) Implementation of Environment Management Policy of the Company w.r.t. judicious use of Mineral resources for growth & development synchronizing mining & environment with prosperity.
- (xix) Specific programmes be initiated especially covering education, health care, livelihood generation, infrastructure development & promotion of sports & culture for SC/ST population; Regular monitoring of ground water table to be carried out, as also the depth of water available in the network of existing wells, by constructing new piezometers as required.
- (xx) Effective safeguard measures, such as regular water sprinkling, shall be carried out in critical areas prone to air pollution and having high levels of PM₁₀ and PM_{2.5} such as haul roads, loading and unloading points and transfer points. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- (xxi) 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. Occupational health and safety measures for workers who are having some ailments like BP, diabetes, or are habitual smokers, should have health check-up once in six months.
- (xxii) Stratified layer system of plantation to be adopted in consultation with the State Govt., which would effectively mitigate the additional dust, sound and vibration.
- (xxiii) The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and ground water for the project.
- (xxiv) The mining operations shall be restricted to above ground water table and it should not intersect groundwater table. In case of working below ground water table, prior approval of the Ministry of Environment, Forest and Climate Change and Central Ground Water Authority shall be obtained, for which a detailed hydro-geological study shall be carried out.
- (xxv) The pollution due to transportation load on the environment will be effectively controlled & water sprinkling will also be done regularly. Vehicles with PUC only will be allowed to ply. The mineral transportation shall be carried out through covered trucks only and the vehicles carrying the mineral shall not be overloaded. Project should obtain 'PUC' certificate from all the vehicles from authorized pollution testing centre.

- (xxvi) There shall be planning, developing and implementing facility of rainwater harvesting measures on long term basis in consultation with Regional Director, Central Groundwater Board and implementation of conservation measures to augment ground water resources in the area in consultation with Central Ground Water Board.
- (xxvii) Regular monitoring of ground water table to be carried out at the upstream and depth of water available in the dug well is to be measured. Monitoring to be done by establishing a network of existing wells and constructing new piezometers.
- (xxviii) Monitoring of Ambient Air Quality to be carried out based on the Notification 2009, as amended from time to time by the Central Pollution Control Board.
- (xxix) The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations.
- (xxx) 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. 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. The maximum height of the dumps shall not exceed 8m and width 20 m and overall slope of the dumps shall be maintained to 45°. 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. The entire excavated area shall be backfilled and afforested. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office located at Ranchi on six monthly basis.
- (xxxi) Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and OB dumps to prevent run off of water and flow of sediments directly into the 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 monsoon and maintained properly. The drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and over burden dumps to prevent run off of water and flow of sediments directly into the 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.

- (xxxii) Dimension of the retaining wall at the toe of over burden dumps and OB benches within the mine to check run-off and siltation shall be based on the rain fall data.
- (xxxiii) Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM₁₀ and PM_{2.5} such as haul road, loading and unloading point and transfer points. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard. 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.
- (xxxiv) 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. Drills shall either be operated with dust extractors or equipped with water injection system.
- (xxxv) 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.
- (xxxvi) A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment, Forest and Climate Change. 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, Forest and Climate Change.
- (ii) No change in the calendar plan including excavation, quantum of bauxite ore and waste should be made.
- (iii) The critical parameters such as PM₁₀ (size less than 10 micro meter), PM_{2.5} (size less than 2.5 micro meter), 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, Forest and Climate Change, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.

- (iv) Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for PM₁₀, PM_{2.5}, SO₂ & 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. Data on ambient air quality should be regularly submitted to the Ministry including its Regional office located at Ranchi 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) Regular monitoring of water quality upstream and downstream of water bodies shall be carried out and record of monitoring data should be maintained and submitted to the Ministry of Environment, Forest and Climate Change, its Regional Office, Ranchi, Central Groundwater Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board.
- (viii) 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 constructing new piezometers during the mining operation. The monitoring shall 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 Ministry of Environment, Forest and Climate Change and its Regional Office, Ranchi, Central Ground Water Authority and Regional Director, Central Ground Water Board.
- (ix) 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.
- (x) 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.
- (xi) 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.
- (xii) 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 Ranchi.

- (xiii) The project authorities should inform to the Regional Office located at Ranchi regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (xiv) The Regional Office of this Ministry located at Ranchi 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.
- (xv) The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest and Climate Change, its Regional Office, Ranchi, Central Pollution Control Board and State Pollution Control Board.
- (xvi) The project proponent shall submit six monthly report on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest and Climate Change, its Regional Office, Ranchi, Central Pollution Control Board and State Pollution Control Board.
- (xvii) A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.
- (xviii) 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.
- (xix) 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, Forest and Climate Change at <http://envfor.nic.in> and a copy of the same should be forwarded to the Regional Office of this Ministry located Ranchi.

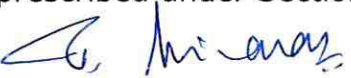
11. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

12. Concealing factual data or submission of false/fabricated data and 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.

13. 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 there

under 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.

14. 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. U. Sridharan)
Director (S)

Copy to:

1. **The Secretary**, Ministry of Mines, Government of India Shastri Bhawan, New Delhi.
2. **The Secretary**, Department of Environment, Government of Jharkhand, Secretariat, Ranchi.
3. **The Secretary**, Department of Forests, Government of Jharkhand, Secretariat, Ranchi.
4. **The Secretary**, Department of Mines, Government of Jharkhand, Secretariat, Ranchi.
5. **The Chief Wildlife Warden**, Government of Jharkhand, Secretariat, Ranchi.
6. **The Additional Principal Chief Conservator of Forests**, Ministry of Environment, Forest and Climate Change, Regional Office (ECZ), Bungalow No. A-2, Shyamali Colony, Ranchi - 834002.
7. **The Chairman**, Jharkhand State Pollution Control Board, T.A. Division Building (Ground Floor), HEC Campus, P.O. Dhurwa, Ranchi - 834004, Jharkhand.
8. **The Member Secretary**, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
9. **The Controller General**, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur-440 001.
10. **The District Collector**, Gumla, State of Jharkhand.
11. **Guard File.**
12. **MoEF website**


(Dr. U. Sridharan)
Director (S)